RAZING ATHABASCA: BITUMEN EXTRACTION AND THE INDUSTRIAL COLONIZATION OF NORTH-EASTERN ALBERTA, 1967-1983

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Razing Athabasca: Bitumen Extraction and the Industrial Colonization of North-eastern Alberta, 1967-1983

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ETHICS

The oral history component of this project has been reviewed by the *Interdisciplinary Committee on Ethics in Human Research* at Memorial University of Newfoundland and granted approval in accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans*. ICEHR number 2012-311-AR.

ABSTRACT

This thesis shows that oil price increases and supply threats associated with the Cold War and the OPEC Crisis caused the Alberta and Canadian governments to prioritize the development of the oil sands industry. By taking equity in the Syncrude project the Alberta government emerged with conflicting mandates as both developer and regulator of the resource. By the mid 1970s, the Alberta government's position produced a policy dynamic that contributed to the marginalization of government concern for the environmental impacts of oil sands development. Oil sands development physically colonized Indigenous land and had significant adverse environmental impacts on proximate ecosystems. The degradation of natural resources relied on by Indigenous peoples made affected communities increasingly desperate for employment in the oil sands economy from which they were largely excluded. Indigenous peoples were forced to fight for environmental protection and employment in the industry.

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TERMINOLOGY

The Woodland Cree term for the Athabasca bitumen deposits is 'asiniw pikow,' which translates approximately as 'rock or stone (asiniw) sap or gum (pikow).'[1] In Dene languages, (Chipewyan, Slave and Dogrib) the deposits are refered to as 'kles ke,' which translates approximately as 'place of (ke) oil (kles).'[2] Indigenous knowledge of the bitumen deposits dates back centuries, as it is found throughout the Athabasca River valley and flows like molasses on hot days. Indigenous peoples used the material to seal canoes, though other uses are unknown.[3]

Two terms most commonly used to reference the Alberta bitumen deposits and synthetic oil industry in mainstream Canada, 'oil sands' and 'tar sands,' have become incredibly loaded words that reflect debate between those who promote the industry and those who oppose it. The first Euro-Canadian explorers at the turn of the 18th century described the deposits as the 'tar sands.' In the 19th century the deposits were identified as bitumen, a black viscous form of organic hydrocarbons, and were referenced more widely as the 'bituminous sands' until roughly the 1960s. In the early decades of the 20th century the International Bitumen Company was founded to excavate the bitumen deposits to supply asphalt as road surfacing, so this may be referred to as the 'bitumen industry.' Yet the term 'tar sands' was widely used from the late 19th century until about the mid-1980s by the public, government, and industry. The term 'oil sands' gradually emerged in the 1920s and 1930s as the deposits were mined to produce synthetic crude

[1] Matthew Whitehead, Traditional Knowledge Coordinator, Mikisew Cree First Nation, 2012.
[2] John Rigney, Special Projects, Athabasca Chipewyan First Nation, 2012.
[3] Ibid.

oil (rather than asphalt), and became more common as the oil sands industry emerged. Throughout the 20th century, these terms were used interchangeably.

By about the mid-late 1980s the term 'tar sands' became much less common in industry and government. With a rise in awareness of the major environmental consequences of bitumen extraction and refining, especially during the post-1997 development phase, the terms 'oil' and 'tar' have become highly politicized. The Alberta government and the oil sands industry have sought to rescind use of the word 'tar' and to establish the term 'oil' as the exclusive reference.[4] Meanwhile, those opposed to the industry and those seeking to highlight the environmental consequences of development, have sought to make 'tar' the exclusive term of reference in an effort to brand the industry as 'dirty.'[5] There have been many resultant debates and antagonisms that revolve closely around the application of these terms. Authors, politicians, speakers and the public tend to be categorized and subjected to major presumptions based on the terms of reference they adopt.

This semantic debate has distracted from very important and real issues that surround the legacy of bitumen extraction in north-eastern Alberta. In this thesis, I hope to avoid this debate by applying the most objective terms possible based on the changing historical contexts to which I refer. My central terms of reference will be 'bitumen' in reference to the deposit, and 'synthetic oil' in reference to the product. Given that the focus of the industry is the production of oil, I will refer to the industry as either the 'synthetic oil industry,' or the 'oil sands industry.'

[4] For example: "Alberta's Oil Sands: Opportunity. Balance," (Government of Alberta, 2008).
[5] Andrew Nikiforuk, *Tar Sands: Dirty Oil and the Future of a Continent* (Vancouver: Greystone Books, 2010).

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Abbreviations

AERS	Alberta Environment Research Secretariat
AEUC	Alberta Energy and Utilities Company
AOSERP	Alberta Oil Sands Environmental Research Program
AOSIEA	Alberta Oil Sands Industry Environmental Association
AOSTRA	Alberta Oil Sands Technology and Research Authority
ARCAN	Atlantic Richfield Canada
ATC	Athabasca Tribal Council
CUFTA	Canada-United States Free Trade Agreement
DEI	Department of Environmental Improvement
ECA	Environment Conservation Authority
ERCB	Energy Resources Conservation Board
GCOS	Great Canadian Oil Sands Limited
HBC	Hudson's Bay Company
IAA	Indian Association of Alberta
MAA	Métis Association of Alberta
MBCA	Migratory Birds Convention Act
NEB	National Energy Board
NEP	National Energy Program
NRTA	Natural Resources Transfer Agreement
OSESG	Oil Sands Environmental Study Group

INTRODUCTION

Since the late 1990s, the Alberta oil sands industry has become an economic powerhouse that employs thousands of people, generates billions of dollars of economic activity, and produces over two million barrels of oil per day. However, it is also the source of massive controversy and disputes over environmental impacts that include wide scale landscape disturbance and wildlife habitat destruction, atmospheric pollution, carbon dioxide emissions, and watershed pollution that may be the cause of cancer outbreaks in downstream communities, and other public health and environmental issues.[1] Indigenous peoples have viewed government regulators as negligent in considering how their traditional lands, Treaty rights and lives are directly impacted by oil sands development.[2] Opponents of oil sands development argue that by failing to adequately regulate and monitor the industry's environmental effects and by collecting disproportionately small royalties, the Alberta government has allowed the oil sands industry to privatize benefits and socialize the negative impacts of development.[3] Although scientific and community based research, and popular writing has examined these problems, very little historical research exists that evaluates the environmental,

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[1] Certain examples of this debate include: "Joint Community Update 2008 Reporting our Environmental Activities to the Community ", (Fort McMurray, AB, Canada: Regional Aquatics Monitoring Program (RAMP) Wood Buffalo Environmental Asso- ciation (WBEA), (Cumulative Environmental Management Association) (CEMA), 2008); "Wood Buffalo Environmental Association Human Exposure Monitoring Program (HEMP) Methods report and 2005 monitoring year results," (Fort McMurray, AB, Canada: Wood Buffalo Environmental Monitoring Association, 2007); "Alberta Oil Sands Community Exposure and Health Effects Assessment Program (HEAP) Summary report," (Edmonton, AB, Canada: Health Surveillance, Alberta Health and Wellness, Government of Alberta, 2000)., Y Chen, "Cancer Incidence in Fort Chipewyan, Alberta 1995-2006," (Edmonton, Alberta: Alberta Cancer Board, Division of Population Health and Information Surveillance, Alberta Health Services, 2009). and Erin N. Kelly et al., "Oil sands development contributes elements toxic at low concentrations to the Athabasca River and its tributaries," *PNAS Environmental Sciences* (2010).

[2] Bob Weber, "Court denies aboriginal bid to block ruling on Jackpine expansion," *The Ottawa Citizen*, 26 November 2012.

[3] Nikiforuk, *Tar Sands: Dirty Oil and the Future of a Continent.*

social and economic consequences of the development of the oil sands industry.[4] In response to this historiographical void, this thesis investigates three socio-political aspects of the first major commercial phase of oil sands development, which took place between the mid-1960s and the mid-1980s. First, it considers the role of the Alberta government in the political and economic evolution of the industry. Second, it examines the environmental policies and programs that evolved to research and regulate the environmental impacts of the industry. And third, it outlines the environmental, social and economic consequences of development for the Athabasca region and proximate Indigenous communities.

The Alberta bitumen deposits are large depositions of unconsolidated fine-grained sands that contain up to eighteen per cent by weight of bitumen, a heavy viscous hydrocarbon mixture, that cover approximately 50,000 square kilometres of north-eastern Alberta.[5] The Athabasca is the biggest known deposit, followed by Cold Lake, Peace River, and Wabasca. In the 1970s, the Athabasca deposit was thought to contain approximately 153 billion tonnes of bitumen in-situ, or approximately 964 billion barrels of oil. Of this deposit, twelve billion tonnes are covered by less than forty-six metres of what the industry refers to as 'overburden': muskeg, trees, vegetation, and soil. The Alberta government estimated that about thirty-eight billion barrels of oil could be recovered with strip mining technology. Bitumen reservoirs are found at various levels in the Manville Group and in the Lower Cretaceous strata of north-eastern Alberta. These

[4] The oil sands industry is a sparsely studied area of history, and the work that exists does not address environmental impacon Indigenous peoples, Paul Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto* (Calgary: Uniersity of Calgary Press, 2004), xvi.

[5] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, Library and Archives Canada (LAC).

stratigraphic units are known as the McMurray (Gething), Clearwater (Blue Sky), Lower Grand Rapids, and Upper Grand Rapids Formations. The Athabasca deposits are part of the McMurray formation. The bitumen accumulation in the deposit is thick, rich and discontinuous. The sand occurs in a wide range of grain sizes, with quartz being the predominant mineral, along with smaller amounts of feldspar, mica and kaolinite. Interbedded are thin beds of silt, shale and coal, and some mineral grains are cemented by nodules of marcasite and siderite.[6]

The region's Indigenous population consists of two ethnoliguistic groups: Chipewyan Dene and Woodland Cree. Within the population are Treaty signatories, non-signatories and Métis. The Athabasca bitumen deposits have been known to the region's Cree and Chipewyan inhabitants since their settlement in the area, and Euro-Canadians have been aware of the deposits since Alexander Mackenzie described them in 1789. Historically, the Athabasca oil sands region was populated by the Cree, although it is unclear how long the Cree had been in the area, or if they had even populated the region much prior to the fur trade.[7] By the mid-1800s, the Chipewyan migrated to the Wabasca-Desmarais and Birch River area to occupy the Anzac and Fort McMurray region. At Fort McKay and Fort Chipewyan the Cree and Chipewyan occupied adjacent territories. There were also substantial Métis communities in each of these settlements.[8]

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[6] Currently it is thought that there is about 1.5 – 2.5 trillion barrels of oil in the Athabasca deposits, about 170 billion barrels of which are recoverable with 2012 oil prices. C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.

[7] Patricia A. McCormack, *Fort Chipewyan and the Shaping of Canadian History, 1788-1920s: "We like to be free in this country"* (Vancouver: University of British Columbia Press, 2010), 20-27.

[8] J.M. Parker, "Athabasca Oil Sands Historical Research Project," *Alberta Oil Sands Environmental Research Program* (1979): xxi.

Figure 1: The Athabasca River north of Fort McMurray, in what would become the Athabasca oil sands region. Unknown Photographer, "ERCB photos of the Athabasca Tar Sands, 1960-63," GA. Used with permission.

The beginnings of the development of the oil sands industry date to the explorations of the Geological and Natural History Survey of Canada in the 1880s, and the signing of Treaty 8 in 1899. Surveys and efforts to extract bitumen for asphalt began in the early 20th century, and the synthetic oil production process was developed during the interwar period. Before the 1970s, synthetic oil production operated on the margins of the Alberta oil industry, lacking the logistical potential to attract substantial private investment. The process of commercialization began in the mid-1950s, prompted by Cold War conflicts, chronic instability in the Middle East, and declining conventional oil reserves in the United States. The Sun Oil Company of Philadelphia became the first major U.S. oil company to invest in the development of Athabasca bitumen. By the late 1960s, as

conventional oil reserves in Alberta declined, the Alberta government positioned the development of the oil sands industry as the province's main strategy for economic growth. In the early 1970s the Organization of the Petroleum Exporting Countries (OPEC) rapidly increased oil prices and threatened Canadian and North American access to oil. The crisis gave synthetic oil a national and continental importance that prompted major U.S. oil companies and three Canadian governments to work to rapidly expand the oil sands industry.

By the mid-1970s, the development of the oil sands industry and other industrial development in northwest Canada had rapidly transformed north-eastern Alberta from a relatively quiet fur trade and subsistence hunting, fishing and trapping-based Indigenous region into a locus of industrialization. Change began with the establishment of Fort McMurray as a major transport site during the 1930s and World War Two.[9] The uranium mining boom at Uranium City, Saskatchewan from the late 1940s to the early 1960s had both environmental impacts and social impacts on Indigenous peoples in the region.[10] Many residents of Fort Chipewyan were drawn away from traditional practices to more inconsistent forms of wage labour.[11] The construction of the W. A. C. Bennett Dam on the Peace River in British Columbia from 1961-68 had drastic impacts on water levels in the Peace-Athabasca Delta that affected fish and wildlife.[12] The establishment of commercial fisheries at Lake Athabasca between the 1920s and the 1960s linked the

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[9] Liza Piper, *The Industrial Transformation of Subarctic Canada* (Vancouver: University of British Columbia Press, 2009), and Ken Coates and William Morrison, *Forgotten North: A History of Canada's Provincial Norths* (Toronto: James Lorimer & Company, 1992).

[10] Arn Keeling, "'Born in an atomic test tube': landscapes of cyclonic development at Uranium City, Saskatchewan," *The Canadian Geographer* 54, no. 2 (2010): 228-52.

[11] McCormack, *Fort Chipewyan and the Shaping of Canadian History, 1788-1920s: "We like to be free in this country."*

[12] Tina Loo, "Disturbing the Peace: Environmental Change and the Scales of Justice on a Northern River," *Environmental History* 12 (October 2007): 895-919.

exploitation of a resource relied on by Indigenous peoples in Fort Chipewyen to foreign markets.[13] Synthetic oil production was an extremely energy and capital-intensive process that had adverse impacts on proximate ecosystems and Indigenous communities caused by large-scale strip mining, atmospheric emissions, watershed contamination, and massive population increases from incoming workers and support industries. This thesis argues that economic dependence on the oil industry in Alberta and energy security concerns in the rest of Canada and North America prompted significant government investments in the mid-1970s that made the federal government, and especially the Alberta government, financially committed to the successful establishment and operation of the oil sands industry. This commitment had significant impacts on environmental policy during the period in question which can be attributed to a conflict of mandates produced by the emergence of the government of Alberta as both developer and regulator of the resource.[14] In this dynamic, development priorities consistently trumped the recognition and resolution of the adverse impacts of the industry on the oil sands region and Indigenous communities.

The first chapter focuses on the colonization of the Athabasca oil sands region and the political economy of oil sands development, assessing the triangular relationship between the federal and provincial governments and the oil industry within the broader context of global oil production. The chapter traces changing fiscal policies designed to aid the oil sands industry: royalty reductions by the Alberta government beginning in the late 1960s to Great Canadian Oil Sands Limited (GCOS), tax write-offs and remissions from the federal government beginning in 1971, and the taking of equity stakes in

[13] Piper, *The Industrial Transformation of Subarctic Canada.*
[14] Although the Alberta government had a long-standing commitment to oil and gas development, the massive financial investments made during the 1970s were unprecedented.

Syncrude in 1975. The period was marked by tense relations between the federal and provincial governments arising from Alberta's priority of increased provincial rights, and the federal priority of increased national energy security in the context of a global energy crisis. Oil price collapse ended the first development phase of the oil sands industry in 1982 with the notable failure of the Alsands megaproject.

The second chapter focuses on the emergence of federal and provincial environmental regulation, research and monitoring in the early 1970s with the creation of the federal Department of Environment in 1971, Alberta Environment in 1971 and the Alberta Oil Sands Environmental Research Program (AOSERP) in 1975. It analyses the evolution and structure of these agencies and programs in the context of oil sands development policy. I argue that the Alberta government's efforts to address environmental issues in oil sands development were marked by progressive action in the first half of the decade and passivity and ineffective regulation thereafter, a pattern which may be traced to the Alberta government's increasing financial commitments to oil sands development. This section focuses particularly on the Alberta Oil Sands Environmental Research Program, examining its formation in 1975, reorganization in 1977 and eventual dismantling in 1980, arguing that structural changes constrained the independence of the program and re-purposed it towards an enabling and legitimating role that more closely addressed the needs of government and industry. Although the government took steps to protect the Athabasca environment, bitumen extraction had a large footprint on the land from strip mining and the construction of tailings ponds. The upgrading process and the large operational power generation emitted thousands of kilograms of gaseous and particulate atmospheric pollutants. The massive influx of people and the rapid expansion

of Fort McMurray resulted in the dumping of raw sewage into the Athabasca River that caused further watershed contamination.

The third chapter addresses the environmental, social and economic impacts of the first development phase of the oil sands industry on proximate Indigenous communities. The Alberta government largely dismissed the presence and well being of Indigenous communities as a federal responsibility, and assumed that they would benefit from employment in the industry. The combination of environmental impacts on land, air and water devastated the natural resource base of the Fort McKay community. The degradation of subsistence resources made the community desperate for employment in the industrial economy from which they were largely excluded. The influx of settler hunters, goods and services further damaged wildlife populations, and challenged the social structures of the community. Regional Indigenous communities formed a strategic alliance as the Athabasca Tribal Council (ATC) to oppose environmental degradation and pursue employment and participation to cope with the crisis. In the concluding chapter I synthesize and evaluate the findings of my research.

Methodology

The research base of this thesis consists of diverse archival material, court decisions and one oral history interview. The archival record is particularly revelatory of the role of the federal and Alberta government in oil sands development and regulation. The archival research of this project is based on records from Library and Archives Canada (LAC), The Provincial Archives of Alberta (PAA), The Glenbow Archives (GA) and the Energy Resources Conservation Board Archives (ERCB). However, the role of

the oil industry and the voice of Indigenous peoples are not prominent in government records. Records from LAC on the early development of the oil sands industry are mostly related to projects of federal-provincial collaboration. They are primarily compilations of correspondence between the federal and provincial governments, the federal government and industry, or communications within government agencies. They also contain reports, agreements, and studies conducted by industry and government agencies. RG19, Department of Finance, holds key information about federal financial involvement in oil sands development including tax remissions, fiscal policy and investments. RG22, Indian and Northern Affairs, contains financial information on Great Canadian Oil Sands Limited. RG39, Forestry, holds federal government records on the AOSERP program. RG108, Environment Canada, holds records on oil sands environmental policy.

The PAA records are primarily intra-provincial agency records, correspondence with industry, and communications with the federal government. As jurisdiction over resources and environmental policy is mostly intra-provincial, much archival evidence for this thesis is in the PAA. The PAA Alberta Environment records hold information on the evolution of oil sands environmental policy. Significant record holdings of correspondence between provincial government agencies and the major oil companies show the changing relationship between the provincial government and industry.

Many industry publications are accessible, but the perspectives and inner workings of the oil sands industry remain buried as archival records of major producers such as Suncor and Syncrude are closed to the public. The GA has some of the largest collections of non-government records in Canada. The Canadian Petroleum Association fonds contains records on a diversity of topics such as fiscal strategies, government

negotiations, and environmental and Indigenous policy. The Imperial Oil fonds contains some valuable records, although the Imperial Oil archive is closed to the public. Unless oil companies open their archives to the public, their operational history and decision-making processes will remain unknown.

I made extensive efforts to arrange oral history interviews with political, industry and Indigenous leaders, and communities to supplement archival material. However, my requests for participation were largely unheard, ignored or declined. This is because I am not from the Athabasca region, I did not have pre-existing contacts, and because I lacked the necessary time to build relationships during the short time period of a one-year MA. This also may be attributed to the on-going expansion of oil sands developments, and increasing controversy associated with the industry. I was able to conduct only one interview with former energy minister Marc Lalonde, with ethics approval from the ICEHR. Without the participation of Indigenous communities it is difficult to adequately incorporate the voices of Indigenous peoples. However, I was able to find significant Indigenous perspectives in archival material from the Glenbow Archives and the ERCB. In the GA I found extensive newspaper clippings from the late 1970s and early 1980s that specifically address controversies involving Indigenous peoples and oil sands development. These articles directly quote Indigenous peoples and provide a voice where much of the archival record is silent. The ERCB archive holds records of all proposals, challenges and complaints associated with energy and resource development in Alberta. Records of project proposal hearings contain statements from interveners, including Indigenous communities, that show the impact of oil sands development on proximate communities. ERCB hearing interventions provide detailed Indigenous perspectives on

oil sands development. The ERCB Library contains some of the only copies of extensive environmental impact assessments on the Fort McKay community in the 1980s. I also found valuable information on the position of the Athabasca Tribal Council in rulings on an affirmative action hiring case from 1983.

Historiography

As an environmental history of the first commercial development phase of the oil sands industry, this thesis endeavours to contribute a focus on environmental and Indigenous history to a literature on hydrocarbon development in Western Canada that has focused predominantly on political, economic, technological and regulatory issues. Although the oil sands industry was separated from the many of the regulations of the conventional oil industry in the 1950s and 60s, consideration of the history of conventional oil development in Alberta and the role of the Petroleum and Natural Gas Conservation Board (precursor to the Energy and Resources Conservation Board) is essential to understanding the regulatory environment from which the oil sands industry emerged. David Breen's major work *Alberta's Petroleum Industry and the Conservation Board* traces the history of hydrocarbon extraction in Alberta focusing on the development of conservation regulation and the influence of the Petroleum and Natural Gas Conservation Board on the development of the industry.[15] Breen identifies the origin of conservation as the emergence of the need for regulation of wasteful and haphazard oil production, and burning of natural gas that defined the first boom period that began in the Turner Valley in the 1910s and lasted until the formation of the Conservation Board in

[15] David H. Breen, *Alberta's Petroleum Industry and the Conservation Board* (Edmonton: University of Alberta Press, 1993).

1938. He demonstrates that the Board's conservation mandate emerged from a belief that hydrocarbon development needed to be carefully managed to combat the free-enterprise mentality of the first boom and ensure that development proceeded in the public interest. However, the Board's mandate did not include administrative responsibility of related areas including surface rights arbitration, natural gas utility pricing and the collection of royalties.[16] The Board's focus on conservation contributed to the development inertia that prioritized the public over the individual good and justified approvals that had significant adverse public health and environmental consequences for lands and communities close to hydrocarbon extraction operations.

Larry Pratt's *Tar Sands: Syncrude and the Politics of Oil* was one of the first academic appraisals of the political-economic dimensions of the prioritization of the oil sands industry during the early 1970s. Pratt's book presented an analysis of the Syncrude deal based on leaked documents which he used to illustrate the seemingly limitless power of the oil industry to access and influence the Alberta government.[17] Pratt's work on the oil sands industry continued in *Prairie Capitalism: Power and Influence in the New West* (1979), co-authored with John Richards as a response to the impact of the international oil crisis on western Canada in prompting oil and gas producing provinces to exercise significant control over their natural resources. Their book focuses on the Alberta and Saskatchewan provincial governments and their policies in the post-World War Two era developing oil, natural gas and potash industries in western Canada. The theme of their study is "the gradual, if uneven, emergence of the provincial state as an entrepreneurial actor in staple-led economic development," arguing that through the 1970s Alberta and

[16] Breen, *Alberta's Petroleum Industry and the Conservation Board*, 544.
[17] Larry Pratt, *The Tar Sands: Syncrude and the Politics of Oil* (Edmonton: Hurtig Publishers, 1976), 9-10.

Saskatchewan took "the first steps towards the ultimate 'provincialization' of their respective resource sectors."[18] Richards and Pratt argue that in taking direct ownership stakes in the Syncrude project, and with the creation of the Alberta Heritage Savings Trust Fund, the provincial government of Alberta became an entrepreneurial actor, a partner of the business community. In advancing this argument Richards and Pratt posit that government entrepreneurship corrupts the ability of governments to adequately regulate industries of which they are a part.

I build on the work of Richards and Pratt, arguing that Peter Lougheed's Conservative government regarded the development of the oil sands industry as an opportunity to break the cycle of corporate dominance of Canadian resource industries. Although the Social Credit government had deep-seated connections with the international oil industry, and may be characterized as anti-democratic and driven by capital, the Social Credit government operated as a facilitator and regulator of the industry without being financially involved.[19] Lougheed recognized the historical importance of primary resource production to the Alberta economy. His government saw the development of the oil sands industry as a means of economic development and diversification. Lougheed's vision resonates with Diefenbaker's Roads to Resources transport infrastructure plan of the 1950s and 1960s which encouraged industrial development by building roads to remote areas of the Canadian north. In the early 1970s Lougheed adopted a policy of rational planning to carefully regulate industry to secure Alberta's benefit and minimize negative impacts. Following the OPEC price increases,

[18] John Richards and Larry Pratt, *Prairie Capitalism: Power and Influence in the New West.* (Toronto: McClelland and Stewart Limited, 1979), 3-11.
[19] Alvin Finkel. *The Social Credit Phenomenon in Alberta* (Toronto: University of Toronto Press, 1989), 217, C. B. Macpherson, *Democracy in Alberta; the Theory and Practice of a Quasi-Party System* (Toronto: University of Toronto, 1953), 158, and Breen, *Alberta's Petroleum Industry and the Conservation Board.* 545.

Alberta took equity in the Syncrude project to fill the void left by Atlantic Richfield Canada's withdrawal. By taking equity in the oil sands industry, the Lougheed government blurred the line between business and government and emerged as an industrial developer of the oil sands industry by the mid-1970s.

This study directly overlaps with the only prominent historical study of oil sands development, Paul Chastko's 2004 book *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, which analyses the political economic development of the oil sands industry. Chastko's book builds on the work of Pratt and Richards but was primarily a study of energy security and international relations. The book was prompted by the 11 September 2001 attacks on the United States, an event that Chastko argues gave energy supply a security dimension and reinforced the importance of North American oil supply alternatives. Chastko argues that the collaboration between the state and the private sector backed sustained scientific research and technological development that facilitated the evolution of the oil sands industry from a marginal source operating on the periphery to a viable non-conventional supply.[20] Chastko connects the oil sands more broadly to global histories of oil as an example of the depletion of conventional reserves and the shift towards unconventional sources of petroleum.[21] While Chastko's book can be seen as part of a relatively well-established historiography on resource development in the Canadian north, his book does not engage with this literature. Further, Chastko also does not discuss the environmental, social, and economic impacts of the development of the oil sands industry on the ecosystems and people of north-eastern Alberta. An analysis that

[20] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*: xvi.
[21] Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (New York: Free Press, 1991).

addresses the major environmental and Indigenous dimensions of oil sands development is essential to understanding the history of this industry.

The political, economic and legal histories of resource development are essential to understanding the impacts and effects of the oil industry. Paul Sabin's *Crude Politics: The California Oil Market 1900-1940* focuses on California law and politics in the opening decades of the 20th century to examine the making of California automobile-based transportation networks.[22] In his 2005 article "Rooting Around in Search of Causality," Paul Sabin writes that in his study of the pre-World War Two California oil market he found institutional and political factors the most useful for explaining U.S. dependence on oil and advocates such an approach for the examination of major resource development questions.[23] He writes that "if environmental historians want to identify the root causes of historical environmental change, they may have to forsake fields and streams for industrial politics and business competition."[24] Economic and political forces were central to shaping the physical construction of the oil sands industry and the ways in which environmental impacts were managed.

Within the literature on hydrocarbon development in Alberta, there is a shortage of research into social and environmental impacts and conflicts. Andrew Nikiforuk's *Saboteurs*, a study of the environmental impacts of the Sour Gas Industry on Peace River, Alberta, assessed the conflict between Wiebo Ludwig, the Alberta Government and the Energy Resources Conservation Board.[25] Nikiforuk suggests that in operating on the premise that hydrocarbon development is almost always a public good, the ERCB

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[22] Paul Sabin, *Crude Politics: The California Oil Market 1900-1940* (Berkley and Los Angeles: University of California Press, 2005).
[23] Paul Sabin , "Rooting Around in Search of Causality," *Environmental History* 10, no. 1 (2005): 85-88.
[24] Sabin, "Rooting Around in Search of Causality," 84.
[25] Andrew Nikiforuk, *Saboteurs: Wiebo Ludwig's War against Big Oil* (Toronto: Macfarlane Walter and Ross, 2001).

subordinates the public health and environmental consequences of sour gas development. Arn Keeling's research into public challenges to the lax environmental regulation of the sour gas industry also addresses the impacts of the ERCB's systematic approval of hydrocarbon projects deemed to be in the public interest of economic development.[26] Although Nikiforuk's recent book *Tar Sands: Dirty Oil and the Future of a Continent* provides an in-depth assessment of many of the social, environmental, political and economic dimensions of the contemporary oil sands industry, there is a dearth of historical research that has examined the initial commercial development phase and environmental policy framework that informed it, and there is no literature that analyses the emergence of the oil sands industry as a manifestation of intra-provincial colonization, or the impacts of the industry on Indigenous communities.[27]

In structuring my general approach to the environmental impacts of the development of the oil sands industry I have found insights from historical political ecology particularly useful.[28] Historical political ecology focuses on land and resource conflicts by integrating narratives of environmental change with an examination of the economic and political aspects of resource extraction and injustice. Christian Brannstrom has advocated that historical political ecology be applied to integrate studies of "evidence for biophysical change with political-economic causes."[29] Arn Keeling and John Sandlos have advocated a historical political ecology approach to studies of mining and industrial

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[26] Arn Keeling, "The Rancher and the Regulator: Public Challenges to Sour-Gas Industry Regulation in Alberta 1970-1994," in *Writing Off the Rural West: Globalization, Governments and the Transformation of Rural Communities*, ed. Roger Epp and Dave Whitson (University of Alberta Press, 2001): 279-300.
[27] Nikiforuk, *Tar Sands: Dirty Oil and the Future of a Continent.*
[28] The approach can be traced to Piers M. Blaikie and Harold C. Brookfield, *Land Degradation and Society* (London: Methuen, 1987) and has been recently advocated by Christian Brannstrom, "What Kind of History for What Kind of Political Ecology?," *Historical Geography* 32 (2004): 71–88, and Arn Keeling and John Sandlos, "Environmental Justice Goes Underground? Historical Notes from Canada's Northern Mining Frontier," *Environmental Justice* 2, no. 3 (2009): 117-125.
[29] Brannstrom, "What Kind of History for What Kind of Political Ecology?": 85.

development in northern Canada.[30] This study assesses the political and economic forces that shaped and powered the establishment of the oil sands industry to provide causal explanation for the environmental, social and economic impacts of the industry on nature and indigenous people in the region.

The development of the oil sands industry was part of a larger process of internal colonization of Indigenous territory by Canada, specifically the Alberta and federal governments, and the oil sands industry. [31] It involved appropriating Indigenous land, occupying it with settlers and exploiting its resources for economic gain.[32] Sub-arctic Canada was legally obtained by the transfer of Rupert's Land to the Dominion of Canada from the Hudson's Bay Company in 1870. Following the transfer, the Canadian government began looking to resource extraction and industrial development as new strategies of economic development. The reports of the Geological and Natural History Survey in the 1880s mentioned vast resources throughout the north. The Klondike gold rush in the late 1890s clarified the importance of resource extraction to the federal government and prompted the signing of Treaty 8 in 1899, and the oil rush in Norman Wells prompted the signing of Treaty 11 in 1921. The Treaties were signed with Indigenous peoples in northern Alberta and the Northwest Territories to secure resource rights to the region. Following the signing of the treaties, vast and diverse extraction

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[30] Keeling and Sandlos, "Environmental Justice Goes Underground? Historical Notes from Canada's Northern Mining Frontier."

[31] Colonialism is a term historically used to define the taking of political control of one country by another, its exploitation for economic gain, and subsequent population by settlers. In northern Canada colonialism constitutes the process of taking of legal and political control over northern Indigenous territory by southern governments, populating it with settlers, and exploiting its resources. McCormack, *Fort Chipewyan and the Shaping of Canadian History, 1788-1920s: "We like to be free in this country."*

[32] Kerry Abel and Ken S. Coates, "The North and the Nation," in *Northern Visions: New Perspectives on the North in Canadian History*, ed. Kerry Abel and Ken S. Coates (Peterborough, Ontario: Broadview Press, 2001): 7-21.

activities ranging from mining, to oil production, to commercial fishing were pursued across sub-arctic Canada.

Coates and Morrison first called for a shift in the emphasis of northern history to the northerly areas of the provinces, arguing that the northern regions of the provinces have become internal colonies of southern centres of power, characterized by massive transfers of wealth out of northern regions and with comparatively little attention to Indigenous or settler local populations.[33] Jim Mochoruk's work on post-Confederation resource development in Northern Manitoba revealed a process of industrialization that was characterized by disregard for the region's ecosystems and inhabitants by extractive industries. The process caused significant ecosystem and social degradation, and a subordination of the provincial government by business interests.[34] David Quiring's study of the Cooperative Commonwealth Federation (CCF) government's policies in northern Saskatchewan revealed government activities that worked to augment the lives of Indigenous peoples based on a belief that indigenous peoples needed to adopt a settler worldview and way of life in order to survive.[35] He argued that paternalistic government policies to promote social policies ultimately failed and perpetuated an economic duality in which Indigenous peoples were left behind. Keeling has examined Uranium City, Saskatchewan as a case study on the impacts of boom and bust uranium mining in the construction and abandonment of northern industrial developments.[36] Liza Piper has

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[33] Coates and Morrison, *Forgotten North: A History of Canada's Provincial Norths.* This approach is also advocated by Abel, "History and the Provincial Norths: An Ontario Example," in *Northern Visions: New Perspectives on the North in Canadian History*, edited by Kerry Abel and Ken Coates, (Peterborough, Ontario: Broadview Press, 2001), 127-40.

[34] Mochoruk, *Formidable Heritage: Manitoba's North and the Cost of Development, 1870 to 1930*: xii.

[35] David Quiring, *CCF Colonialism in Northern Saskatchewan: Battling Parish Priests, Bootleggers, and Fur Sharks* (Vancouver: University of British Columbia Press, 2004), xii.

[36] Keeling, "'Born in an atomic test tube': landscapes of cyclonic development at Uranium City, Saskatchewan."

argued that industrialization in sub-arctic Canada was a process of assimilation in which nature, economy and society were forced to adapt to one another and create new forms of physical and cultural relationships that bound natural systems to industrial economies.[37] Piper demonstrated that post-World War Two industrialists in the northern great lakes region significantly degraded communities and ecosystems with their decisions regarding waste disposal and the use of toxic chemicals.[38] The process of industrial colonization in north-eastern Alberta is more reminiscent of that described by Mochoruk and Piper than that described by Quiring. The Alberta government and the oil sands industry had minimal regard for Indigenous peoples during the founding of the industry. The concern was for the rapid production of oil, and Indigenous peoples were considered to be a federal responsibility. The industrial colonization of the oil sands region was a process that involved the legal acquisition of Indigenous land with Treaty 8, the construction of oil sands plants on lands relied on by Indigenous peoples, and the degradation of natural resources by synthetic oil production activities. This process compounded the effects of the broader industrialization of the Peace-Athabasca Delta, and Indigenous peoples sought further participation in the new industrial economy as their subsistence practices became unviable.

Applying theory from historical cartography and resource geography to the work of the Geological and Natural History Survey of Canada and the Department of Mines between 1875 and 1945 in north-eastern Alberta reveals a process of cognitive colonization that re-inscribed the area in the image of the bitumen deposits. In his 2001 paper "Resource Triumphalism: Postindustrial Narratives of Primary Commodity

[37] Piper, *The Industrial Transformation of Subarctic Canada*, 10.
[38] Ibid., 13.

Production," Gavin Bridge shows how "extractive spaces are constructed through a discursive dialectic which simultaneously erases socioecological histories and reinscribes space in the image of the commodity."[39] The purpose of the paper is to emphasize the role of primary commodity supply zones in narratives of modernity and social life, despite their underrepresentation in popular accounts of post-industrial society, but Bridge's insights into the social construction of extractive spaces resonate with themes in critical cartography and studies of visual representation. Critical cartography stemming from those including Brian Harley and David Woodward has complicated the notion of the self-evident map as a statement of geographic fact.[40] Critical cartography has revealed maps as living, purposed texts, a fundamental application of which is in colonization. Matthew Edney writes that "the mapping by one polity, within its own spatial discourses, of the territory of another establishes a geography of the mind, within which empire can be conceptualized and advocated, and a geography of power within which empire can be physically constructed."[41] The colonial applications of cartography can also be seen in other visual sources such as landscape art and illustration. John Crowley has shown how British surveyors mapped and artistically represented post-conquest New France "as part of the creation of a global British landscape, with Canada as a distinctive part," and Greg Gillespie has examined narratives by rich Britons of pre-confederation sport hunting in

[39] Gavin Bridge, "Resource triumphalism: postindustrial narratives of primary commodity production," *Environment and Planning* 33 (2001): 2149-73.
[40] J. Brian Harley and David Woodward, *The History of Cartography: Cartography in Prehistoric, Ancient and Medieval Europe and the Mediterranean*, vol. 1 (Chicago: University of Chicago Press, 1987), and J. Brian Harley, "Rereading the Maps of the Columbian Encounter," *Annals of the Association of American Geographers* 82, no. 3 (September 1992): 522-36.
[41] Matthew H. Edney, "The Irony of Imperial Mapping," in *The Imperial Map: Cartography and the Mastery of Empire*, ed. James R. Akerman (Chicago: University of Chicago Press, 2009), 45.

Rupert's Land, as colonial texts that worked to domesticate exotic colonial spaces.[42] Maps, images, and narratives are powerful tools of representation that can colonize space through the production of purposed geographic knowledge. In north-eastern Alberta, maps informed by the work of the Geological Survey were used by the Dominion of Canada to reserve prime bitumen deposits for industrial development long before the physical construction of the industry took place.

René Fumoleau's 1975 book *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939*, focused on the policy and development conditions that informed Treaty 8 and Treaty 11, and how the treaties were understood by the Indigenous peoples who signed them. He connected the push of resource development with the move to sign Treaties 8 and 11 in the western provinces and the Northwest Territories. He demonstrated that the discovery of gold in the Klondike shifted the Canadian government's exclusive focus on the fur trade towards settlement and resource development. He argued that these treaties were fraudulently obtained by the Dominion of Canada to extinguish Indigenous title to the region. He focused specifically on the meaning and impact of these treaties on the Indigenous communities that signed them. The Indigenous communities, he argued, signed the treaties without understanding all the terms and implications, as their primary concerns were about protecting traditional ways of life and ensuring their freedom to live from the land. Under the Royal Proclamation of 1763 the British Crown ensured that no British government would take native lands by force.[43] Alongside Fumoleau, *The Spirit of the Alberta Indian Treaties* provides essential

[42] John E. Crowley, "Taken on the Spot': The Visual Appropriation of New France for the Global British Landscape," *The Canadian Historical Review* 86, no. 1 (March 2005), and Greg Gillespie, *Hunting for empire narrative of sport in Rupert's Land, 1840-70* (Vancouver: UBC Press, 2007): 1-28.
[43] René Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-*

archival material and oral history interviews on the Treaty making process and Indigenous interpretations of the Treaties in the context of the Indigenous rights movement of the 1970s.[44]

Mel Watkins's *Dene Nation, The Colony Within* and Robert Page's *Northern Development: The Canadian Dilemma* specifically addressed Indigenous peoples and northern development in response to the Mackenzie Valley Pipeline Inquiry.[45] The Mackenzie Valley Pipeline was a scheme to build a natural gas pipeline from the Beaufort Sea to northeastern Alberta to supply natural gas to western Canada, especially the oil sands region. Published in 1977, *The Colony Within* directly followed the conclusion of the MVPI and the publication of Justice Thomas Berger's report.[46] The book included the Dene Declaration, a statement by the Dene people that affirmed the Indigenous right to self determination as a universal human right, and that they should be allowed to pursue their own society on a base of renewable resources. Watkins argued that the Dene had been robbed of their land by the Crown, looking back to the Hudson's Bay Company's sale of Dene land to the Canadian government, a sale that justified Crown ownership and endeavoured to turn the Dene from land bound people to landless wage slaves.[47] Watkins advocated for a Canadian divergence from a staples economy and alternative forms of economic development. Published nine years later, *Northern Development* was Robert Page's response to the approach taken by the federal

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1939 (Calgary: University of Calgary Press, 2004).

[44] Richard Price ed., *The Spirit of the Alberta Indian Treaties* (Montreal: Institute for Research on Public Policy, 1979).

[45] Mel Watkins, *Dene Nation: Colony Within* (Toronto and Buffalo: University of Toronto Press, 1977), and Robert J. D. Page, *Northern Development: The Canadian Dilemma* (Toronto: McClelland and Stewart, 1986).

[46] Thomas R. Berger, *Northern frontier, northern homeland: the report of the Mackenzie Valley Pipeline Inquiry* (Toronto: J. Lorimer in association with Publishing Centre, Supply and Services Canada, 1977).

[47] Watkins, *Dene Nation: Colony Within*, 88.

government and business interests to the north that he described as a mixed attitude of romanticism and greed.[48] He argued that the proceedings of the MVPI were relevant to all northern resource projects of the 1980s as they emphasized the significance of land to Indigenous peoples, issues with unsettled land claims, perceptions of the treaties, and Indigenous skepticism of relations with the federal government. He advocated for a changed philosophy of northern development that prioritized social and environmental considerations. The Inquiry was revisited in the 1990s by Paul Sabin in his 1995 article, "Voices from the Hydrocarbon Frontier: Canada's Mackenzie Valley Pipeline Inquiry (1974-1977)" which questioned the notion that indigenous peoples are "stock characters, locked within a traditional world or devastated by their exposure to modern society."[49] He argued that looking closely at the testimonies of the Berger inquiry revealed that few opposed development, while most advocated for local control, revenue sharing, participation and strict assurances of minimal environmental impact.

The application of Harold Innis's staples theory of Canadian economic development is essential to understanding the development of the oil sands industry in that it signifies Canada's on-going prioritization of staple production.[50] Innis argued that Canada's economic growth has been directed towards the exploitation of staple products, which he defined as semi-processed raw materials for export. He argued that the process was cyclical, highly responsive to booms and busts in commodity markets, but that resource economies would be progressively dependent on extraction. He maintained that

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[48] Page, *Northern Development: The Canadian Dilemma*, 2.
[49] Paul Sabin, "Voices from the Hydrocarbon Frontier: Canada's Mackenzie Valley Pipeline Inquiry, 1974-1977," *Environmental History Review* 18, no. 1 (Spring, 1995): 18.
[50] Harold Adams Innis, *The Fur Trade in Canada: An Introduction to Canadian Economic History* (Toronto: University of Toronto Press, 1999), Harold Adams Innis, Daniel Drache, ed. *Staples, markets, and cultural change selected essays* (Montreal, Que.: McGill-Queen's University Press, 1995), and Harold Innis, *Settlement and the Mining Frontier*, Canadian Frontiers of Settlement Vol. 9 (Toronto: MacMillan, 1936).

Canada's foundation and economic growth was dependent on the demands of external markets for primary resource exports. The extraction and transportation of staples generated minimal domestic production of other value added goods and did not significantly contribute to Canadian industrial production. He argued that industry, transportation, trade, finance and governmental activities would increasingly become subordinate to the production of the staple rather than a more specialized manufacturing community.[51]

Henry Vivan Nelles applied Innis's theories in a study of the relationships between government and industry in staple production. He demonstrated that the Ontario provincial government had played a major role in collaborating with private interests to facilitate the development of Ontario's natural resource economy. Nelles concluded that by the early twentieth century the process of natural resource development in Ontario had reduced the state to a client of the business community.[52] Nelles's book is fundamental to this thesis not just for his analysis of the political effect and societal implications of the narrowing divide between business and government, but because of its critique of the ramifications of provincial resource ownership. He demonstrated that from the outset Ontario's natural resources were destined for American markets, an arrangement that produced a three-way struggle between the province, Ottawa, and industry over the degree of processing of exports. Nelles was a major influence on many scholars studying northern resource dependency. Geographer John Bradbury examined Canadian resource extraction towns in the 1960s and 1970s as direct subordinates of the multinational corporations that funded and abandoned the industries that supported them through the

[51] Innis, *The Fur Trade in Canada: An Introduction to Canadian Economic History*, 385.
[52] Henry Vivian Nelles, *The Politics of Development: Forests, Mines and Hydro-Electric Power in Ontario, 1849-1941* (Montreal and Kingston: McGill-Queen's University Press, 2005), 494.

increasing internationalization of capital.[53] His work also addressed the Québec state-based resource corporations in impelling resource development in that province.[54] Geographers Roger Hayter and Trevor Barnes have recently affirmed the persistence of primary resources in Canadian economic development. They have argued that following Fordism, the increasing collapse of trade barriers, and increasing foreign ownership, the notion of the staples trap is still a relevant critique of the Canadian economy.[55] Jim Mochoruk's book on resource development in Manitoba examines resource extraction as a root of a narrowing divide between business and government in that province.[56] In this analysis of the oil sands industry, I do not focus directly on the staples trap and the capture of demand linkages. Instead, my focus is on the effects of resource dependence on environmental regulation. I argue that Alberta's increased reliance on the profitability of the oil sands industry caused by inflation and the OPEC crisis from the early 1970s to the early 1980s, combined with the Lougheed government's emphasis on securing maximum domestic socio-economic benefits and demand linkages contributed to a regulatory condition that prioritized development and marginalized the environmental impacts of oil sands development.

Assessing the environmental impacts of the oil sands industry requires examining the technology and production process it used to produce synthetic oil from the Athabasca bitumen deposits. Unlike conventional oil, which can be pumped out of the

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[53] John H. Bradbury, "Towards and Alternative Theory of Resource-Based Town Development in Canada," *Economic Geography* 55, no. 2 (April, 1979): 147-66.
[54] John H. Bradbury, "State Corporations and Resource Based Development in Quebec, Canada: 1960-1980," *Economic Geography* 58, no. 1 (January, 1982): 45-61.
[55] Roger Hayter and Trevor Barnes, "Innis' Staple Theory, Exports, and Recession: British Columbia, 1981-86," *Economic Geography* 66, no. 2 (April 1990): 156-73, and Roger Hayter and Trevor J. Barnes, "Canada's Resource Economy," *The Canadian Geographer* 45, no. 1 (2001): 36-41.
[56] Jim Mochoruk, *Formidable Heritage: Manitoba's North and the Cost of Development, 1870 to 1930* (Winnipeg: University of Manitoba Press, 2004).

ground and refined into a marketable product, bitumen must be strip-mined, boiled to extract it from the sand, and upgraded into synthetic crude oil through a process that removes excess nitrogen and sulphur before it is refined. The resource can only be commercially viable when developed in massive quantities by exploiting economies of scale and high energy prices. The oil sands industry in the 1970s was to oil what Daniel Jackling's copper mines were to copper. In the 1920s United States as rich copper deposits declined and prices increased, Daniel Jackling began exploiting massive low-grade ore bodies in Bingham Canyon, Utah by revolutionizing open-pit mining techniques and large scale rock-crushing extraction processes. Tim LeCain equates what he refers to as Daniel Jackling's techniques of 'mass destruction' with Henry Ford's techniques of mass production, using economies of scale and modern technology to make large profits by producing huge quantities at lower costs.[57] For Jackling, this approach was dictated by the low concentrations of copper in the porphyry copper deposits he sought to exploit. Similarly, the composition of bituminous sand, a low-grade hydrocarbon, requires large-scale extraction and high-energy processing with complex and expensive equipment to be profitable. To produce synthetic oil, the industry has stripped thousands of hectares of north-eastern Alberta's boreal forests and muskeg, destroying ecosystems and wildlife habitats, and has had significant adverse impacts on air and water quality. Although the environmental impacts of oil sands activities have been poorly monitored and hotly debated by industry and government, communities have observed a diversity of negative impacts and recent peer reviewed research from Kurek et al. has demonstrated that "oil sands lake ecosystems have entered new ecological states

[57] Tim LeCain, *Mass Destruction: The Men and Giant Mines that Wired America and Scarred the Planet* (New Brunswick, New Jersey and London: Rutgers University Press, 2009).

completely distinct from those of previous centuries" because of major increases in polycyclic aromatic hydrocarbons (PAHs) and dibenzothiophenes from by oil sands operations.[58]

The development of the oil sands industry coincided with the birth of environmental policy in Canada. Environmental policy emerged in response to local political movements and continental developments in environmental politics. Canadian movements took significant inspiration from U.S. movements such as the widely referenced opposition to DDT use mobilized in part by Rachel Carson's *Silent Spring.*[59] Keeling has shown that the pollution of English Bay in Vancouver in the 1960s was a paramount concern of the early environmental movement in British Columbia.[60] Jennifer Read has looked to public campaigns against water pollution from detergents in 1960s Ontario as early environmental concerns that prompted the formation of Pollution Probe, and later the Ontario Department of the Environment in 1971.[61] Morris Zaslow has written that, as environmental groups began to gain attention of media in the 1960s and 70s, Canadian governments began forming specific environment departments, which conflicted with development priorities. The emergence of this new obligation left governments in the 1970s with contradictory mandates struggling to reconcile opposing policies. They sought at once to enhance environmental regulation, and also to increase

[58] Joshua Kurek, Jane L. Kirk, Derek C. G. Muir, Xiaowa Wang, Marlene S. Evans, and John P. Smol, "Legacy of a Half Century of Athabasca Oil Sands Development Recorded by Lake Ecosystems," *Proceedings of the National Academy of Sciences* (2013), and Kelly et al., "Oil Sands Development Contributes Elements Toxic at Low Concentrations to the Athabasca River and Its Tributaries."
[59] Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962).
[60] Arn Keeling, "Sink or Swim: Water Pollution and Environmental Politics in Vancouver, 1889-1975," *BC Studies*, no. 142/143 (Summer/Autumn 2004): 69-101.
[61] Jennifer Read, ""Let us heed the voice of youth": Laundry Detergents, Phosphates and the Emergence of the Environmental Movement in Ontario," *Journal of the Canadian Historical Association / Revue de la Société historique du Canada* 7, no. 1 (1996): 227-50.

financial and administrative aids to promote development.[62] The regulatory paradox of conflicting mandates emerged as a significant problem for Alberta by the mid-1970s as the government established the Department of Environment and the Alberta Oil Sands Environmental Research Program concurrent to taking equity in the Syncrude project. The experience of AOSERP reveals efforts of government and industry to co-opt environmental research to suit a partial development agenda, a process described by Shelia Jasanoff in her study of regulatory science in the U.S.[63] The science of regulation in Alberta echoed Jasanoff's observation of U.S. regulatory science, as Alberta environmental policy was not objective verifiable truth that balanced development would adequately protect the environment and enable economic growth, but rather, "a state of knowledge that satisfies tests of scientific acceptability and supports reasoned decision making, but also assures those exposed to risk that their interests have not been sacrificed on the altar of an impossible scientific certainty."[64] The Alberta government's commitment to the success of the oil sands industry and the ERCB's mandate to facilitate development in the public interest undermined the prospect of meaningful environmental protection in Alberta.

Scholars evaluating the impacts of industrial resource developments on and actions of Indigenous communities often invoke Indigenous agency, the subject of heated debate in the mid-1990s. The article by Robin Brownlie and Mary-Ellen Kelm "Desperately Seeking Absolution: Native Agency as Colonialist Alibi?" criticized studies which they argued marginalized the adverse impacts of colonialism on Indigenous

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[62] Morris Zaslow, *The Northward Expansion of Canada 1914-1967* (Toronto: McClelland and Stewart, 1988), 370.
[63] Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (Cambridge, Massachusetts: Harvard University Press, 1990), vii.
[64] Jasanoff, *The Fifth Branch: Science Advisers as Policymakers*, 250.

peoples by emphasizing their power to shape their lives and land within the colonial space.[65] They advocate a dual approach that addresses both impact and agency. In 1997 Frank Tough advocated the study of economic impacts on Indigenous peoples. In his book on northern Manitoba he wrote that even when Indigenous people were successfully employed they were not masters of their destiny, as Indigenous peoples's ability make certain choices was not a significant measure of power.[66] Tough argued that Indigenous peoples had little choice but to participate in the market economy, and that though they were able to adapt to employment in the resource economy, were ultimately dependent on a narrow range of economic activities and vulnerable to the booms and busts of global commodity markets. Recent Indigenous histories of resource development in sub-arctic Canada carefully examine both the impacts on and cultural adaptations of Indigenous peoples living with resource development projects.[67]

The approach of this thesis was largely informed by political economy and historical political ecology literatures that address the role of business and politics in extractive resource development. The specific focus on the efforts of the Alberta government to try to benefit from and control resource development driven by foreign markets is drawn from Nelles's examination of the Ontario government in *The Politics of Development*, and Richards and Pratt's critique of the Lougheed government in *Prairie Capitalism*, as well as the hypothesis advanced by Sabin that political and economic factors must be carefully examined to evaluate the causes of environmental change. I use

[65] Robin Brownlie and Mary-Ellen Kelm, "Desperately Seeking Absolution: Native Agency as Colonialist Alibi?," *Canadian Historical Review* (December 1994): 543-56.
[66] Frank Tough, *As Their Natural Resources Fail: Native People and the Economic History of Northern Manitoba, 1870-1930* (Vancouver: University of British Columbia Press, 1997), 305.
[67] Lianne Leddy, "Cold War Colonialism: The Serpent River First Nation and Uranium Mining, 1953-1988" (Ph.D Thesis, Waterloo: Wilfrid Laurier University, 2011), Hans Carlson, *Home is the Hunter: The James Bay Cree and Their Land* (Vancouver: University of British Columbia Press, 2008) and Quiring, *CCF Colonialism in Northern Saskatchewan: Battling Parish Priests, Bootleggers, and Fur Sharks*.

Zaslow's observation that Canadian governments struggled to balance conflicting mandates of development and environmental protection following the introduction of environmental policy to assess the efforts of the Alberta government to prevent and monitor the environmental dimensions of oil sands development. For evidence of biophysical change I have sought to examine results of environmental research as well as the observations of proximate Indigenous peoples to present a culturally balanced assessment of environmental change in the oil sands region. Drawing from current themes in Indigenous history, I have investigated the environmental, social and economic impacts of industrial development on proximate communities, as well as the responses of communities to the colonizing force of oil sands development.

CHAPTER ONE

Bitumen Economy: The Establishment of the Oil Sands Industry and the Rise of Corporate Government

The industrialization of the oil sands region began in the late 19th century through processes of legal and cognitive colonization, by which the region was appropriated as an industrial zone by the development ambitions of southern Canada, prior to the physical construction of commercial industry. The Dominion of Canada extended Anglo-Canadian legalism over the region with purchase of the Hudson's Bay Company lands in 1870, and through signing Treaty 8 with the region's Indigenous inhabitants in 1899. In the early 20th century, the Department of Mines sent representative surveyor and geologist Sidney C. Ells to the region to locate the richest bitumen deposits. His results formed the basis of maps that defined the region by bitumen extraction, settlement and industrialization. Process research and development began on a large scale following World War One at the University of Alberta and at the Abasand plant near Fort McMurray that operated between 1930 and 1945. However, the discovery of large reserves of conventional oil in Alberta in 1947 discouraged major private investment in the immediate post-war period.

The beginning of commercial synthetic oil production was marked by the opening of the Great Canadian Oil Sands Limited plant in 1967, funded by a Sun Oil investment following the Suez Crisis in 1956. In 1975, after the withdrawal of Atlantic Richfield Canada from the Syncrude consortium, the federal government along with the governments of Alberta and Ontario took equity in the consortium to ensure the survival

of the project. For the government of Alberta, investment in the oil sands industry resulted in its emergence by the mid-1970s as an entrepreneurial actor, functionally a member of the oil sands industry, occupying a liminal position as both developer and regulator of the resource. The persistence of the Alberta government's dual position through the 1970s and 80s bolstered political and economic dependence on the success of the oil sands industry, and significantly influenced environmental and social aspects of oil sands development policy and thereby shaped the form of environmental change in the Athabasca oil sands region.

Law and geographic knowledge

Prior to Confederation in 1867, the Hudson's Bay Company sought to restrict settlement in the Slave and Athabasca Lakes region to maximize fur production by minimizing disturbance of the region's Indigenous communities from excessive contact with Europeans.[1] In the years following the transfer of Rupert's land, the fur trade remained strong and expanded until the end of the Second World War despite the decline of the Hudson's Bay Company's dominance.[2] By the 1890s, the government of Canada had extensive knowledge of the potential mineral wealth of the Peace, Athabasca and Mackenzie districts that prompted the initiation of serious plans to sign treaties.[3] Fumoleau has show that the abundance of petroleum was a significant factor in impelling the signing of Treaty 8 and Treaty 11. Reports from the Geological and Natural History

[1] Arthur J. Ray, *Indians in the Fur Trade: Their Role as Trappers, Hunters and Middlemen in the Lands Southwest of Hudson Bay, 1660-1870* (Toronto: University of Toronto Press, 1974), and René Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939* (Calgary: University of Calgary Press, 2004), xxvi.
[2] Arthur J. Ray, *The Canadian Fur Trade in the Industrial Age* (Toronto: University of Toronto Press, 1990).
[3] Richard Daniel, "The Spirit and Terms of Treaty Eight," in Price, *The Spirit of the Alberta Indian Treaties*, 60.

Survey of Canada, including from Robert Bell in 1882-83, that repeatedly mentioned the presence of "petroleum bearing sandstone," "petroleum impregnated marl," "flowing asphalt," "petroleum strata," and "free petroleum," created a perception in the south that the north was "floating" on oil.[4] In 1888 Robert McConnell reported that, "the Devonian rocks throughout the Mackenzie Valley are everywhere more or less petroliferous and over large areas afford promising indications of the presence of oil in workable quantities."[5] The news of such reserves of oil drastically changed southern imaginings of the northwest. Fumoleau cited Senator John C. Schultz of Manitoba who created a Senate Select Committee, the third report of which stated that "The evidence submitted to your committee points to the existence in the Athabasca and Mackenzie Valleys of the most extensive petroleum field in America, if not the World." The report envisioned a future importance for this resource:

> The uses of petroleum and consequently the demand for it by all Nations are increasing at such a rapid ratio, that it is probable that this great petroleum field will assume an enormous value in the near future and will rank among the chief assets comprised in the Crown Domain of the Dominions.[6]

Fumoleau wrote that "with the discovery of 'immense quantities of petroleum,' the expense and obligation of a treaty with the Indians began to look minimal when compared to the enormous wealth to be acquired from them."[7] Fumoleau cited a Privy Council Report from 1891, which outlined the importance of a treaty:

> On a report dated 7th of January 1891, from the Superintendent General of Indian Affairs, stating that the discovery in the District of Athabaska and

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[4] Robert Bell, *Report on Part of the Basin of the Athabasca River, N. W. T.*, Geological and Natural History Survey of Canada (Montreal: Dawson Brothers, 1884), in ibid., 24.
[5] Robert G. McConnell, *Report on an Exploration in the Yukon and the Mackenzie Basins, N. W. T.*, Geological and Natural History Survey of Canada, Annual Report, 1888-1889 (Montreal: William Foster Brown and Co., 1890), in ibid., 25.
[6] John C. Schultz, in Canada Senate, *Journals*, 27 March 1888, p. 65-66, in ibid., 26.
[7] Ibid., 27.

> in the MacKenzie River Country, that immense quantities of petroleum exist within certain areas of those regions, as well as the belief that other minerals and substances of economic value... are to be found therein, the development of which may add materially to the public wealth, and the further consideration that several Railway projects, in connection with this portion of the Dominion, may be given effect to at no such remote date as might be supposed, appear to render it advisable that a treaty or treaties should be made with the Indians who claim those regions as their hunting grounds, with a view to the extinguishment of the Indian title in such portions of the same, as it may be considered in the interest of the public to open up for settlement.[8]

While the foundations of Treaty 8 were laid in the early 1890s, the government of Canada did not pursue its signing until the discovery of gold in the Klondike and the political stability brought by the election of Prime Minister Sir Wilfrid Laurier.[9] Treaty 11 was not signed until 1921 during the conventional oil boom at Norman Wells, Northwest Territories.

In signing Treaties 8 and 11 Indigenous signatories gave up their rights to the land in exchange for hunting rights, reserve lands and various material benefits. Fumoleau argues that Treaties 8 and 11 were fraudulently obtained by the Dominion of Canada. The signatories signed without understanding all the terms and implications, as their primary concerns were about protecting traditional ways of life and ensuring their freedom to live from the land. The treaties were largely interpreted as peace and friendship treaties that did not entail total land ownership. The commissioners who obtained the treaties had illiterate signatories sign an 'X,' and the Treaty Commissioners are accused of forging seventy-two 'X' signatures of the total seventy-five. Fumoleau wrote that,

> By Treaties 8 and 11, the Canadian government intended to extinguish the Indian title to the immense Athabasca-Mackenzie District. The Indian

[8] Government of Canada, Privy Council Report, 1891, in Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939*, 30.
[9] Daniel, "The Spirit and Terms of Treaty Eight," in Price, *The Spirit of the Alberta Indian Treaties*, 66, and Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939*, 30.

> people intended to sign friendship treaties... In spite of the hands clasped in agreement as depicted on the treaty medal, it is very probable that the two parties neither understood each other nor agreed on what the treaty meant.[10]

Richard Daniels has suggested that Treaty 8 was a complex deal for Indigenous peoples that was only made possible by a significant degree of trust between parties and the mutual need for an agreement.[11] Through the sale of HBC territory to the Dominion of Canada and the signing of Treaty 8, southern Canada gained legal ownership of the oil sands region.

In 1912, Canada imported 93% of its petroleum at a cost of $89 million.[12] Such expenditures impelled searches for domestic supplies. The career of Sidney C. Ells as senior engineer and Athabasca representative of the Department of Mines aptly demonstrates the power of commodity-based representations of space to reshape and colonize a region prior to the large-scale physical construction of an industry. Born in 1878, Sidney Ells grew up in Montréal and received a B.A. from McGill University in 1901, and a B.Sc. in earth sciences in 1908. In 1912 he took a job with the Mines Branch as assistant to the Director. Between 1913 and 1945 Ells conducted exploration, surveying, prospecting, documentation, photography and experimentation that widely expanded Euro-Canadian knowledge of the region, specifically in terms of bitumen and its potential extraction and value. In 1913, Ells was tasked by the Department of Mines to do an inquiry into the extent of the Athabasca bitumen deposits. While completing the project he became enthralled by the same 1883 reports from Robert Bell that prompted

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[10] Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939*, xxvi.
[11] Daniel, "The Spirit and Terms of Treaty Eight," in Price, *The Spirit of the Alberta Indian Treaties*, 99.
[12] Sidney C. Ells, *Recollections of the Development of the Athabasca Oil Sands* (Ottawa: Department of Mines and Technical Surveys, 1962), 2.

Treaty 8, by the embellished testaments and illustrations of boosters, and by encouraging references in the press.[13]

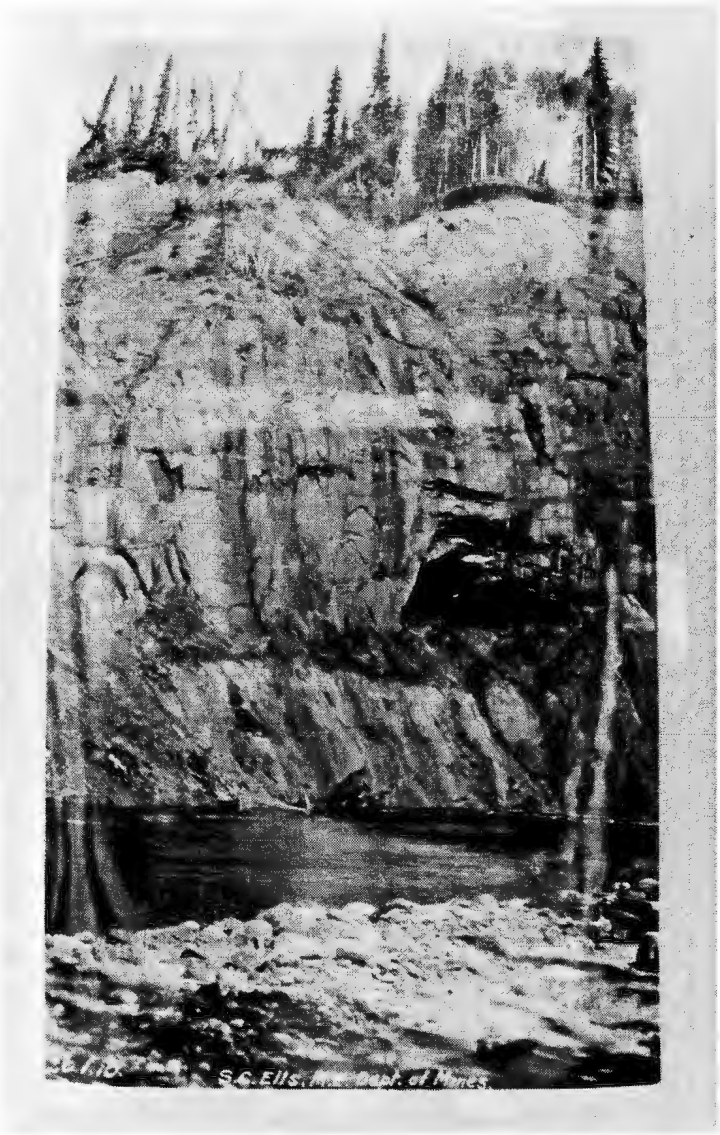

Figure 2: Sidney C. Ells, "Exposure of bituminous sand on the east side of the Steepbank River, illustrating the massive structure and cleavage typical of the richer grades of bituminous sand," (1 October 1920), in *Photographs Illustrating Certain Activities in the McMurray Area During Parts of 1942, 1943 and 1945 with introductory comments on previous operations by S.C. Ells,* MG30 A14 vol. 6, LAC. Used with permission.

In the spring of 1913, Ells loaded up a 30-foot scow at Athabasca Landing with four men and three months of supplies, and floated downstream towards Fort McMurray.

[13] Ells, *Recollections of the Development of the Athabasca Oil Sands*, 2.

That summer Ells conducted reconnaissance surveys 100 miles north of Fort McMurray along the Athabasca River, and 100 miles down each the Clearwater, Firebag and Christina Rivers, none of which had been previously surveyed. He made maps, took extensive notes, and photographed major outcroppings of bitumen. On his return to Ontario, his report of the first trip emphasized the abundance of bitumen outcrops, advocating an extensive core drilling program to indicate "the true value of any subsurface area," the demonstration and testing of the material for paving, and research into a separation process with which to produce synthetic crude oil.[14] On orders of the Director of the Parks Branch, he secured a 580-acre bitumen deposit close to Fort McMurray, which came to be known as the Horse River Reserve. Between 1920 and 1945 the deposit was used for extracting bitumen to pave Jasper National Park and for oil production efforts. Between 1922 and 1923 Ells conducted extensive topographical surveying and surface profiling. The survey covered over 2000 square kilometres, and focused on a general classification of bituminous sand areas, mainly based on outcrops along various streams, grouped according to possible commercial value, thickness and character of overburden, the difficulty of overburden removal, and the apparent quality and estimated quantity of bitumen available.[15] He specifically highlighted the importance of the Mildred-Ruth lake area. The Syncrude Mildred Lake Mine is currently one of the largest mines in the region.

By mapping the region specifically for the location of bitumen deposits, Ells overlaid the history of the region's Indigenous people. His maps have no mention of the settlements, traplines and trails relied on by Indigenous peoples for subsistence and

[14] Ells, *Recollections of the Development of the Athabasca Oil Sands*, 14.
[15] Ibid., 59.

commercial hunting, gathering and trapping activities. In his mapping process he named many features himself, such as Patterson and Forrest Lakes after two of his canoe men. The survey information provided by Ells was used by the government of Canada to rope off the most valuable bitumen deposits as mine sites (Figure 3). Ells conducted further surveying and exploration, some limited drilling in 1931, and a significant geological survey in 1942-47 of 6500 square kilometres south of Lake Athabasca.

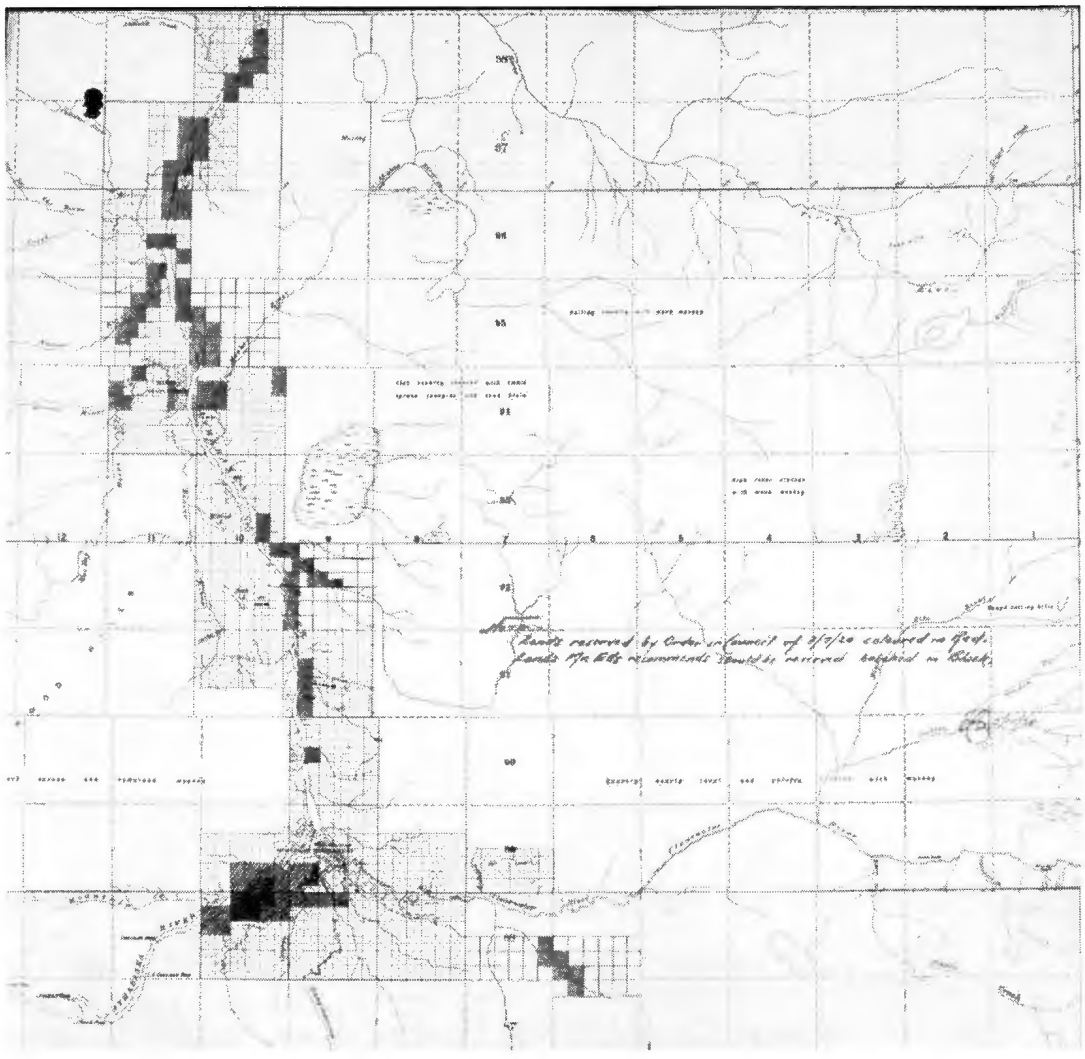

Figure 3: Northern Affairs Program, "Lands reserved by Order in Council of 2/7/20 coloured in Red. Lands Mr. Ells recommends reserved hatched in Black." (5 October 1920) RG-85 vol.1801 file.42594 (pt.1.2), LAC. Used with permission.

The efforts of Sidney Ells are significant for colonizing the region by building on law to re-imagine place in Euro-Canadian perceptions of the Athabasca region. In 1962, recalling over thirty years of work in north-eastern Alberta, Ells reaffirmed his vision for the oil sands region:

> In 1913 a great and potentially valuable natural resource in the northern part of the province of Alberta lay dormant and unknown while even the surface of the country was unsurveyed. Yet as a result of investigations in the field and in the laboratory, the outcome may ultimately be reflected in important commercial development. Where now the almost unbroken wilderness holds sway, industrial plants may arise and tall stacks dominate the landscape. Few will then pause to consider what these developments represent, but success will be the reward of those who had a part in the undertaking.[16]

As the scale of the deposits were appreciated, the oil sands region was conceptualized by Alberta and the federal government as an industrial heartland of oil production, wealth and sustenance. Legal colonization through treaty-making accompanied prospecting, surveying and mapping as cognitive processes that extended Euro-Canadian design over the oil sands region, colonizing through ownership and knowledge long before the physical construction of the oil sands industry took place.

Research and development

In its natural state bitumen has a high viscosity and is generally less dense than water only above the temperature range of 311° to 294° K. The mineral grains are water wetted, meaning that the grain of sand is separated from the bitumen by a layer of water, a key feature of the deposits, which enables the separation process.[17] That bitumen could

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[16] Ells, *Recollections of the Development of the Athabasca Oil Sands*, 100.

[17] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.

be upgraded into synthetic crude oil was known by the mid 19th century, but production techniques were limited and extremely expensive. Historically, upgraded bitumen has been a crisis fuel, as most significant research and development efforts to establish the industry have come in response to shortages of conventional crude oil. World War One demonstrated the superiority of internal combustion over steam and livestock as a means of power, and its importance to industrialization.[18] Then lacking a significant domestic supply of conventional oil, the Alberta government moved to exploit the bitumen deposits by funding a research program headed by Karl Clark at the University of Alberta. Between 1922 and 1925 Karl Clark discovered that when hot water was added to bituminous sand, it caused the bitumen to retract, separate from the sand, and float to the surface of the water. The sand would sink, and the bitumen could be skimmed from the surface. The process was named as the hot water separation process or the aqueous recovery process. The technique was first used in the experimental Abasand Oils Plant near Fort McMurray between 1930 and 1945.[19]

During World War Two, oil cemented its dominance in the conduct of modern warfare.[20] Following the bombing of Pearl Harbour in December 1941 and the torpedoing of two Canadian tankers in February 1942, federal oil controller George Cotrelle called for Abasand to be upgraded to process 10,000 tons per day from 19,000 tons/year, despite unresolved technical problems.[21] The federal government moved to improve bitumen extraction with a re-evaluation of the Abasand Oils Plant and by requesting the financial involvement of the Alberta government. The agreement between the Federal Minister of

[18] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power.*
[19] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 1.
[20] Daniel Yergin has argued that oil determined the outcome of numerous pivotal battles and singly shaped the outcome of the six-year conflict. Yergin, *The Prize: The Epic Quest for Oil, Money, and Power.*
[21] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 35.

Munitions and Supply C. D. Howe and Alberta Premier William Aberhart, required the two governments to share risks in the Abasand plant.[22]

Figure 4: Unknown photographer, "Abasand Refinery Boiler Plant (1942)," image 85-22-008, University of Alberta Archives (UAA). Used with permission.

In re-evaluating the Abasand plant Karl Clark found that the mechanical shovels could not dig when the temperature sank below 7° C, because the bits would wear out or break, among other technical problems that hampered and frequently stopped production.[23] The federal government pledged $500,000 to rehabilitate the Abasand plant in 1942, and in 1943 took full control, breaking ties with the Alberta Research Council. In 1945 the Abasand plant burnt to the ground and the federal government abandoned efforts to produce oil from bitumen for the next three decades.

[22] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 43.
[23] Ibid., 52.

Following the departure of the federal government from efforts to produce synthetic oil from the Athabasca bitumen deposits at the end of World War Two, the Alberta government worked unilaterally to salvage the industry as conventional oil wells produced only twelve per cent of Alberta consumption in 1946.[24] Construction of the Oil Sands Limited Plant commenced in 1946 at Bitumount, jointly financed by the province and a $250,000 contribution from private investor Lloyd Champion.[25] As the Bitumount plant reached completion in 1947, the oil market became flooded with conventional oil supplies. Between 1949 and 1972 proven world oil reserves increased from 62 to 534 billion barrels and no new oil sands plants came online until 1967.[26] During the Second World War the United States had won significant influence in the Middle East through diplomatic pressure and covert operations such as installing the Shah of Iran, and succeeded the British as the dominant foreign power in the region, gaining access to the world's largest supplies of conventional crude oil.[27] But more significantly, in 1947, Imperial Oil struck oil at the Leduc oil field near Edmonton, Alberta, and was pumping 3500 barrels per day from thirty different wells by the end of that year. In 1948 more oil was found at Redwater, and the total reserves of the two fields amounted to more that 900 million barrels of oil, which created a level of supply security that eliminated the demand for synthetic oil.[28] Despite the abundance of conventional oil, the Alberta government maintained the Bitumount plant as a strategic reserve.[29]

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[24] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 57.
[25] Ibid., 59.
[26] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 72.
[27] Ibid., 410.
[28] Breen, *Alberta's Petroleum Industry and the Conservation Board*, 245-46.
[29] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 72.

Following the Leduc and Redwater discoveries, conventional oil production in Alberta became a bonanza, with new reserves discovered faster than older reserves consumed. Demand was overtaken by supply in 1949 and industry began pushing for a

Figure 5: Unknown Photographer, "Bitumount Plant, (1949)," image 91-137-172, UAA. Used with permission.

pro-rationing system to salvage plummeting prices. Despite the small scale of the Bitumount plant, conventional producers felt threatened by any oil supply contribution to an already overflowing market. To protect the experimental project, the Alberta Social Credit government led by Premier Ernest Manning passed *An Act relating to Statutes Affecting Bituminous Sands Operations*, on 6 April 1955, which exempted the oil sands industry from the 1950 *Oil and Gas Resources Conservation Act,* and thus from the

Energy Resources Conservation Board's pro-rationing system.[30] The two priorities of the board were conservation and equity: to prevent the wasteful exploitation of oil and gas, such as preventing the flaring and venting of natural gas by oil producers, and to devise mechanisms for the equitable sharing of production.[31] David Breen describes the purpose of the ERCB as to ensure the "maximum efficient but equitable production."[32]

Commercialization

The first big investment from a major oil company from the United States was by the Sun Oil Company of Philadelphia. Sun took interest in the oil sands as early as 1951 at the suggestion of Calgary employee Ned Gilbert, and took a majority position in Great Canadian Oil Sands Limited following the nationalization of the Suez Canal by Egyptian President Gamal Abdel Nasser and the subsequent Suez Crisis in 1956. The crisis compromised the company's supply security in the Middle East and affirmed the needs of major oil companies to establish a diversity of oil supply sources amidst the increasingly volatile Cold War. GCOS took over Abasand to develop bituminous sands leases 4 and 14.[33] As GCOS began submitting proposals for a 35,000 bbl./day synthetic oil plant, the company lobbied for tax and royalty reductions to increase the potential profitability of the project. In early 1959, GCOS Managing Director T.P. Clarke wrote to Alvin Hamilton, federal Minister for Northern Affairs and National Resources seeking classification as a mine, which would include a three-year tax holiday, a 33⅓% depletion allowance, and an exemption from import and sales tax. He wrote that these conditions

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[30] Province of Alberta, 1955, Chapter 57, "An Act relating to Statues Affecting Bituminous Sands Operations," (6 April 1955), RG22 vol. 1334 file 40-3-36 vol. 1, LAC.
[31] Breen, *Alberta's Petroleum Industry and the Conservation Board*: xiv.
[32] Ibid., 537.
[33] Parker, "Athabasca Oil Sands Historical Research Project," xxi.

were "the only basis that makes our project economically feasible."[34] Hamilton granted approval to change classification and depletion allowance in 1959, but did not agree to exempt the project from import and sales taxes, as this concession would have greatly reduced potential federal revenue from the construction and operation of the industry. Following the 1955 exemption of the oil sands from the ERCB pro-rationing system, the tax holiday and depletion allowance granted to GCOS in 1959 marked the second major policy shift adopted to bolster the economic viability of synthetic oil production, and worked to separate the oil sands from the tax and regulatory environment of the conventional oil industry.[35]

Though the GCOS proposal process went smoothly, the conventional oil supply glut worsened, and by 1962, in response to pressures from industry lobbyists, Premier Manning threatened to indefinitely suspend synthetic oil plant approvals. In 1963 the ERCB approved the GCOS proposal and construction of the plant started later that year. As construction progressed on the GCOS lease, the U.S. oil industry majors Cities Service, Imperial Oil, Royalite, and Atlantic-Richfield formed the Syncrude consortium in 1966 and began planning a second commercial oil sands plant. The move by these majors to form Syncrude Canada Limited was a response to the depletion of conventional supplies in Alberta, global tensions and conflicts associated with the Cold War, and increasing demand for oil.[36]

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[34] A depletion allowance in this case is a tax concession to an oil company whose business activities of oil extraction reduce the value of its assets. T.P. Clarke, Managing Director, GCOS, to Alvin Hamilton, federal Minister for Northern Affairs and National Resources, 19 February 1959, RG22 vol. 1334 file 40-3-36 vol. 1, LAC.

[35] T.P. Clarke, Managing Director, GCOS, to Alvin Hamilton, federal Minister for Northern Affairs and National Resources, 19 February 1959, RG22 vol. 1334 file 40-3-36 vol. 1, LAC

[36] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 90.

The GCOS plant came on line in 1967 as Alberta conventional oil production began to decline. GCOS worked one of the richest surface deposits in the Athabasca region. The project required the removal of an average twenty metres of overburden by bucket wheel extractors supplemented by trucks and front-end loaders. The same machines would then excavate the bitumen and transport it to a separation and upgrading facility. The GCOS plant was designed to process 6100 tonnes of bitumen per day, expanding to over 7,000 tonnes by the end of the 1970s. The GCOS project was capable of mining 80% of the bitumen on the lease and separating and recovering 90% of crude bitumen contained in the mined sand and effected a 65 weight or 78 volume per cent conversion of the recovered bitumen into synthetic crude oil. The overall result was a recovery in the form of synthetic crude oil of about 47 weight per cent of bitumen in place.[37]

To extract bitumen, thousands of hectares of land were stripped, dug up and boiled. The process emitted huge amounts of atmospheric and watershed contaminants that had a significant impact on the immediate area, specifically on the Fort McKay community.[38] The GCOS plant emitted 318 tonnes per day of sulphur dioxide. The hot water separation process required 10.7 tonnes of water per tonne of synthetic crude oil production, only 60% of which could be obtained from recycling. The process produced a massive amount of tailings. The GCOS tailings pond covered over nine square kilometres by the mid-1970s. The GCOS upgrading process used three delayed cokers each processing 4300 tonnes per day of raw bitumen. The approximate liquid coke yield from the operation was 70 weight per cent of coker feed, most of which was used as fuel for

[37] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.
[38] Kurek et al., "Legacy of a Half Century of Athabasca Oil Sands Development Recorded by Lake Ecosystems."

steam and power generation. Coker yield products were fractioned to yield naphtha and distillate fractions which were then recombined to produce a stable synthetic crude oil. The bitumen upgrading process had to be relatively complete to make the product economical for long-range travel to market. Further, because of high sulphur, nitrogen, vanadium and nickel content, bitumen required extensive desulphurization and denitrogenation to be suitable for processing in the existing refineries of available market areas. The process was extremely expensive and energy intensive. The deposits were often thick and saturated but variable with little transmissibility because of the viscosity of bitumen.[39]

In the twenty-two years from the burning down of the Abasand plant to the opening of the GCOS plant the glut of conventional oil stymied most private interest in synthetic oil production though geopolitical realities of global oil supply had impelled investments from major U.S. companies. The Alberta and Canadian federal governments had omitted the synthetic oil industry from key regulations to increase the economic viability of Oil Sands Limited and GCOS in landmark decisions that would reduce the amount of revenue that would accrue to governments from future projects. At the close of the 1960s the oil boom that had fuelled Alberta since 1947 came to an end. In January 1968 the United States discovered the massive Prudhoe Bay oil field on Alaska's North Slope. The Prudhoe Bay discovery accentuated the dependence of the Alberta economy on oil production by revealing the potential for U.S. discoveries of domestic oil to displace

[39] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.

imports from Alberta.[40] The Prudhoe Bay oil field was initially estimated to contain ten billion barrels of oil and 740 billion cubic meters of natural gas, and was producing over one million barrels of oil per day by the 1970s.[41] The decline of Alberta conventional oil increased the importance of the successful establishment of the oil sands industry.

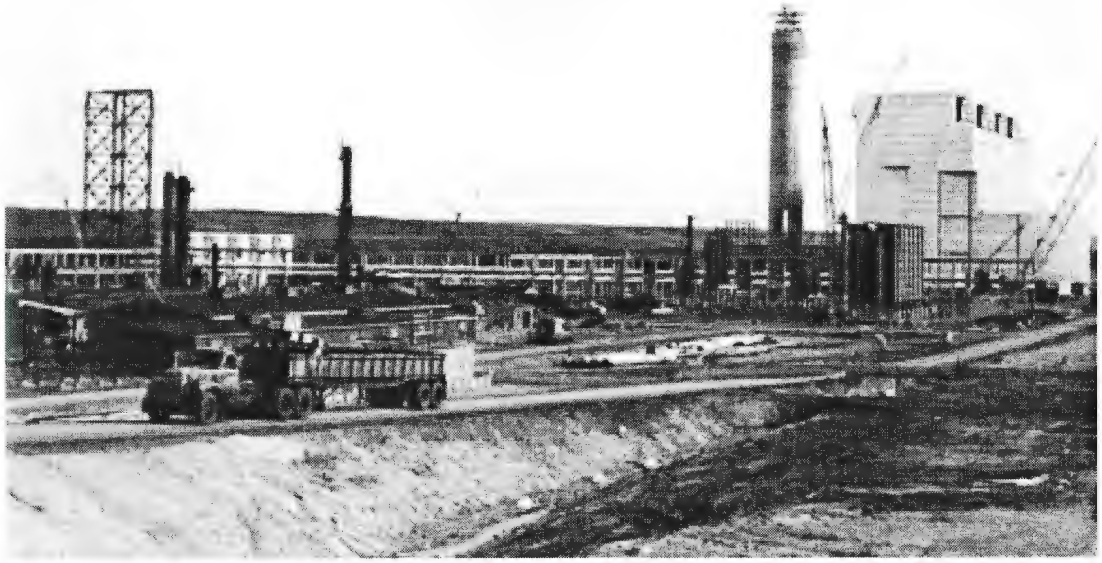

Figure 4: Unknown Photographer, "Construction at Great Canadian Oil Sands plant, near Fort McMurray, Alberta," (mid-1960s), PA-3672-5, GA. Used with permission.

By 30 September 1970 the GCOS project, which cost $380 million to build, had a deficit of $75.5 million, and claimed losses of $46.5 million from 1 October 1968 to 10 September 1970.[42] Armin Hetch of the *Edmonton Journal* reported from an industry

[40] Richards and Pratt, *Prairie Capitalism: Power and Influence in the New West.* : 169.
[41] The Prudhoe Bay oil field is now thought to have totalled 25 billion barrels, "Estimated Speculative Recoverable Resources of Oil and Natural Gas in Alaska," (State of Alaska: Department of Natural Resources, Division of Geological and Geophysical Surveys, January 1974).
[42] The figure of $380 million is the total cost of building the plant. The breakdown of costs was $256 million in plant construction, $90 million in pre-production and development, $3 million in road construction to Fort McMurray, $2 million contribution to build a bridge over the Athabasca River, $13 million in construction of employee housing in Fort McMurray, and $16 million to construct a pipeline to Edmonton. Harold Rea, Chairman of the Board and K. F. Heddon, President, GCOS, to The Honourable E.

conference in 1967 that the GCOS plant might not exist had it not been classified as a mine in 1959: "many speakers noted the project may not have been possible without the three year tax holiday..."[43] The plant was running into major technical problems with machinery regularly breaking down, rapidly wearing out, and work forces turning over every two to three months because of the harsh work conditions in north-eastern Alberta.[44] A key strategy used by GCOS to improve their financial situation was to appeal to ministers of both levels of government for royalty reductions, debt erasure, and tax remissions and holidays. In response to such pleas, Premier Manning ordered a production royalty reduction in 1970 from sixteen to eight per cent starting 1 April of that year.[45] The royalty reduction further reduced government revenue from synthetic oil production. For Alberta, economic dependence on oil production and the importance of job creation justified continued concessions to the oil sands industry.

GCOS appealed in 1970 to the federal government for a remission of sales tax paid on machinery between 1964 and 1967. GCOS was approved in 1963, and began construction in 1964, under the federal government taxation regime established on 13 June 1963, which repealed the application of sales tax exemptions on production equipment and building materials with an amendment of the *Excise Tax Act*.[46] In June 1967, however, taxes on production machinery and apparatus were removed. In response

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J. Benson, Minister of Finance, Ottawa, Canada, "Brief of Great Canadian Oil Sands Limited in respect of sales taxes paid under the Excise Tax Act of Canada on its Athabasca Tar Sands plant," 18 November 1970, RG19 vol.5235 file 9628-15-2 vol.1, LAC.

[43] Armin Hecht, "New Oil Sands Policy In Works: $235 Million Project Only Beginning of Development," The Edmonton Journal, 2 October 1967, 76.356 box. 35 file. 845, PAA.

[44] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 90.

[45] GCOS was granted a reduction from the gross provincial royalty of 16% of value of produced synthetic crude to 8% of the first 900,000 bbl. Of monthly production and 20% of the remainder. Canadian Petroleum Association to Alastair Gillespie, Minister of Energy, Mines and Resources, government of Canada, "An Assessment of Royalty Treatment and Other Factors Impacting Oil Sands Development." R1526 vol.267 file no.6 file.243-14, LAC.

[46] G.L. Bennett, Assistant Deputy Minister, Excise, to Mr. J.R. Brown, Senior Tax Adviser, Department of Finance, 9 December 1970, RG19 vol.5235 file 9628-15-2, vol.1, LAC.

to this change in taxation, GCOS asked for a remission of sales taxes paid under the *Excise Tax Act*, totalling $8.75 million, primarily based on the argument that because their plant was not formally delivered until 10 August 1967, after the tax had been removed, they should receive a refund.[47] GCOS also argued that the government should grant the tax remission on economic grounds citing the creation of jobs and benefits to Fort McMurray. GCOS Chairman W. H. Rea and President K.F. Heddon wrote to the federal Minister of Finance E.J. Benson in November 1970,

> The success of the GCOS project is of vital importance to the people of Fort McMurray. Employment at the GCOS plant now totals about 700, plus about another 650 who work for contract maintenance and service companies... As a result of the GCOS operation, Fort McMurray has become a modern town...[48]

The GCOS remission request prompted a convoluted response from policy advisors and the minister. A tax remission of $6 million dollars was granted. While the final decision for approval was made at the ministerial level, policy advisors maintained that such a tax remission was unjustifiable and should not occur. One policy advisor wrote to Finance Minister E. J. Benson, "there seems little legal basis for federal aid in the form of tax relief." He cited two previous concessions to GCOS already granted by the federal government: an interest free deferral of payments on the $1.8 million Abasand debt, that GCOS took on in acquiring their lease, until 1978, and the three year tax holiday for 1968 to 1971 based on the project's classification as a mine.[49] In spite of significant opposition

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[47] Department of Finance, "Policy Paper on GCOS Tax Remission," 1971, RG19 vol.5235 file 9628-15-2 vol.1, LAC.

[48] W. Harold Rea, Chairman of the Board and K. F. Heddon, President, GCOS, to The Honourable E. J. Benson, Minister of Finance, Ottawa, Canada, "Brief of Great Canadian Oil Sands Limited in respect of sales taxes paid under the Excise Tax Act of Canada on its Athabasca Tar Sands plant," 18 November 1970, RG19 vol.5235 file 9628-15-2 vol.1, LAC.

[49] The Abasand debt was based on an agreement by the company to repurchase for $1.9 million the plant and property rights from the federal government in 1946, GCOS took on this debt with the acquisition of

from within the ministries to reject the application, Benson approved the remission in August 1971.[50]

Financial concessions granted to GCOS in the late 1960s and early 1970s by the two levels of government undercut government revenue from oil sands development. Government involvement drastically increased through the following decade and would influence regulation of the industry. While understandable that governments would be willing to lower royalties on a new form of oil, to postpone debt payments on the Abasand plant, and grant a tax holiday, the Finance Minister's legally dubious remission of $6 million dollars of sales tax set a new standard in what oil companies could convince governments to do. GCOS was at that point undoubtedly proving to be uneconomic, yet it seems unlikely that Sun Oil would have turned its back on a $380 million investment so soon after starting commercial production.

Rational planning and the Lougheed Conservatives 1970-71

Peter Lougheed's Conservative party came to power on 31 August 1971. Lougheed was a Calgary lawyer who was determined to revitalize the oil industry. He felt that the Social Credit government had acted spinelessly in encouraging resource development, that it had been inadequate in drafting policy, and that it had not acted as an owner, despite becoming legal proprietor of natural resources following the 1930 Natural Resources Transfer Agreement.[51] Before coming to power, Lougheed made a speech in

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the Abasand debt. Department of Finance, "Policy Paper on GCOS Tax Remission," 1971, RG19 vol.5235 file 9628-15-2 vol.1, LAC.

[50] F.R. Irwin, Director, Personal, Commodity and Estate Tax Division, to J.R. Brown, Senior Tax Advisor, Ministry of Finance, 21 January 1971. RG19 vol.5235 file 9628-15-2 vol.2, LAC., and F.R. Irwin, to G.L. Bennett, Assistant Deputy Minister (Excise), Department of National Revenue, 23 August 1971. RG19 vol.5235 file 9628-15-2 vol.2, LAC.

[51] The NRTA transferred ownership of natural resources from the federal to the provincial domain in 1930.

March 1971 to the Alberta Legislature in which he called for a "much higher priority to the field of industrial development."[52] On taking office Lougheed immediately moved to expand the role of the province in national policy making, especially relating to energy issues. His stance was that "if Alberta poker chips are involved at the poker table, we will be at that table."[53] Lougheed's government changed Alberta from being a passive regulator dependent on resource rents, to an aggressive entrepreneurial actor. Richards and Pratt wrote that Lougheed felt that the government itself "take the initiative," in effect, "giving notice that any Conservative government would consider itself an entrepreneurial actor in provincial economic development."[54] The corporatization of the Lougheed government developed from the Syncrude negotiations during the OPEC crisis, and increased over the next decade.

After being elected, Lougheed's initial approach was one of rational planning. He advocated careful control of all aspects of the oil sands industry to maximize domestic benefits and minimize risk. In his first throne speech on 29 March 1972, Lougheed spoke of the importance of building a second oil sands plant and the importance of government investment. But he also expressed the financial implausibility of using a Crown corporation to fund the project, describing it as "$500 million of debt not available to the province," and compared it to committing to a risk venture, like building a railroad, with crown money.[55]

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[52] Lougheed speech in the Alberta Legislature, March 12, 1971, Text in provincial Legislative Library, Edmonton, in Richards and Pratt, *Prairie Capitalism: Power and Influence in the New West*, 169.
[53] Peter Lougheed, quoted in Peter Foster, *Blue-Eyed Shieks: The Canadian Oil Establishment* (Toronto: Totem Books, 1979), 47-48.
[54] Richards and Pratt, *Prairie Capitalism: Power and Influence in the New West*, 215-50.
[55] Peter Lougheed, Speech to the Throne, 29 March 1972, *Alberta Hansard*, 1972, vol.18, p.34, provincial Archives of Alberta (PAA).

Despite rising prices and the increasing pressures of energy security in the Cold War world, the oil sands industry remained extremely expensive and high risk. Syncrude submitted an amended proposal in 1971 that highlighted several major problems with oil sands development. First, as of 1972 only surface mining was possible as research on in-situ extraction had not yet proved it a viable method. Second, the overhead costs were huge. The investment required for the processing of a single daily barrel of synthetic crude ranged from $4,000-$5,000, meaning that a plant capable of producing 100,000 – 125,000 bbl./d would cost up to $500 million to build. Third, growing inflation meant that estimates of final construction, supply and labour costs would be inaccurate. And fourth, there were long start-up times, meaning that synthetic oil would not immediately account for supply shortages.[56]

In August 1972, the Alberta Conservation and Utilization Committee prepared a confidential policy paper for the Executive Council of the Alberta government. While the paper advocated rapidly increased natural resource development, it also emphasized the importance of government involvement to shape developments. The Committee maintained that the core principle must be that "Alberta should regulate and control the Athabasca Tar Sands development for the socio-economic benefit of Albertans."[57] It was a strategy that envisioned a "much slower rate of development than suggested by foreign markets."[58] The approach taken towards the burgeoning oil sands industry was largely informed by the province's experience with the conventional oil dating back to the 1910s.

[56] Science Council Report, "Decision Making in the North: Oil Sands Case Study, November 1974" (Vancouver: Canadian Resourcecon Limited, 1974), 22. And National Energy Board, "Potential Limitations of Canadian Petroleum Supplies," December 1972, GA CPA Box 44 File 534, in Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 146.
[57] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[58] Ibid.

Many Albertans considered the conventional oil boom as a squandered opportunity defined by overproduction and price collapse. Pro-rationing came too late, and major quantities of cheap exports rapidly depleted reserves and limited the long term accrual of public benefits. Lougheed sought to prevent a repeat of the conventional boom experience in the oil sands by carefully regulating the industry. The Conservation and Utilization Committee outlined the situation:

> On one hand we can continue the policies of the conventional crude oil developments creating tremendous and unregulated growth and developments resulting in short term benefits accruing to the Province as well as the long term costs arising from exported energy, technology, job opportunities and environmental damages, in addition to the depletion of non-renewable resources... Conversely we can regulate the orderly growth and development of the bituminous tar sands for the ultimate benefit of Alberta and Canada in order that Canadian energy technology will be expanded, Albertans will find beneficial and satisfying employment within its diversified economy, and our environment will be protected and enhanced for future use... But when the magnitude of the real, fiscal and manpower requirements and environmental consequences are visualized, it becomes apparent that the latter course of action is imperative.[59]

The statement highlights the cross border economic forces that so often shape Canadian resource extraction projects. The Committee wrote, "Alberta is not under any pressure to develop synthetic crude oil from the bituminous tar sands for the purpose of meeting either Albertan or Canadian petroleum requirements." It asserted that the main pressure to develop the oil sands industry was from external markets, and therefore the long term benefits of synthetic oil production could be secured "if, and only if, the development is firmly controlled in a manner which complements and supplements the development requirements of Alberta and Canada." Early Alberta policy advocated careful regulation

[59] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.

of the oil sands industry to break reliance on foreign capital to fund Canadian resource extraction projects by limiting foreign investments and maximizing the domestic benefit of all aspects of the industry.[60]

In Alberta in the early 1970s, Lougheed sought to ensure that the oil sands industry was developed with as much domestic labour, technology, and synthetic oil upgrading and refining facilities as possible to ensure the maximum accrual of economic benefits and control over the industry to Alberta. Lougheed saw that the "tar sands offers a unique opportunity to change the historical trend of ever increasing foreign control of non-renewable resource development in Canada."[61] In seeking to regulate the oil sands industry, Lougheed's government emerged as a participant within it, which increased Alberta's economic dependence on its successful establishment, and ultimately compromised the Alberta government's regulation of the industry.

OPEC and the rise of corporate government

The massive oil price increases during the OPEC crisis created an imperative to rapidly produce oil that challenged Lougheed's rational planning approach to the oil sands industry and changed the Alberta government from acting as a cautious facilitator to an aggressive entrepreneurial developer. The OPEC price shocks began in 1970 in Libya when Colonel Mu'ammer Muhammad al-Gaddafi began raising oil prices after taking power in a 1969 coup.[62] Other OPEC countries followed and began using the price of oil to influence foreign policy. The three-week long Yom Kippur War and The Arab-

[60] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[61] Ibid.
[62] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*: 580.

Israeli conflict in October 1973 exacerbated tensions between Western countries and OPEC, causing further price increases. The process led to price increases from $3.00 per barrel in 1972 to $10.50 in 1974.[63] By increasing the price of oil, OPEC created an artificial supply crisis in Canada and throughout the Western World. In doing so, the crisis changed one of the fundamental premises of the Alberta government's development strategy, that the reason for oil sands development would primarily be to profit from serving foreign markets, and stimulated oil sands production to ensure domestic oil supply security. The increased price of oil made the very expensive and technologically demanding process of producing synthetic crude oil from the Athabasca bitumen deposits more economically viable, and therefore more appealing to prospective investors. Lougheed spoke of the imperative in legislature: "As far as the international financial community is concerned, the [GCOS] project, to put it mildly, was a financial setback. The second plant [Syncrude] must succeed."[64] The technical challenges and supply imperative would lead the federal and Alberta governments to take drastic measures to ensure the success of the Syncrude project.

In September 1973, Lougheed signed an initial agreement with the Syncrude Consortium. In a public address he emphasized the importance of the oil and gas industry to Alberta, and clearly spelled out the province's dependence on primary resource production:

> We can't lose sight in Alberta of the fact that our prosperity and our growth has been dependent upon the vitality and strength of our two primary industries, agriculture and oil and gas... The oil and gas industry since we've discovered it and are producing it during the 1950s and 1960s

[63] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 607-8.
[64] Peter Lougheed, Speech to the Throne, 29 March 1972, *Alberta Hansard*, 1972, vol.18, p.34, PAA.

> and in these early years in the 1970s have a tremendous amount to do with the prosperity of Alberta and Albertans.[65]

Lougheed's address also revealed the temporal constraints on Alberta to mobilize the oil sands industry in light of supply alternatives. He maintained that if the Syncrude project did not proceed, "not only are there the lost jobs, but oil sands developments might be set back permanently, because there are alternatives, - the Colorado oil shales, nuclear energy, - and of course Canadian crude oil backup supply would be weakened considerably." Lougheed maintained that it was a "hard bargain, but a good one" he had driven, and that he had established "some pretty tough environmental controls over the project to assure that there is adequate reclamation of the surface as the project moves along."[66] The Syncrude agreement set the groundwork for the establishment of the project, and reflected the new energy security priority of developing the oil sands industry.

In response to the more than 300% increase in oil prices by 1974, the federal government froze oil prices at the pump to protect consumers, and subsidized the difference between import and pump prices. They funded the $3 billion per year oil import subsidy by increasing federal taxes on oil companies, by ending the deduction of royalties from taxable income, by raising direct taxes to fifty per cent, and by reducing the depletion allowance from thirty per cent to twenty-five per cent.[67] This policy angered Alberta and created massive tensions between the federal and provincial governments. Prime Minister Trudeau sought "Canadian self-sufficiency in oil and oil products" before

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[65] "Text of Premier Lougheed's Address Tuesday," *The Edmonton Journal*, 9 September 1973, RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[66] Ibid.
[67] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 148.

the end of the decade.[68] He worked to re-orient the oil energy system east-west along national lines, rather than north-south along continental lines. His government created Petro-Canada, a national oil company and announced the future construction of an oil pipeline to Montreal to reduce dependence on imports. To reduce shortages, Ottawa cut exports to the U.S. by ten per cent over the winter of 1974, and created the Foreign Investment Review Agency (FIRA) and expanded the Canadian Development Corporation (CDC) to monitor U.S. investment in the Canadian oil industry. Trudeau also announced renewed federal commitment to the oil sands industry with a $40 million investment.[69]

The price freezes were devastating for GCOS and Syncrude, and inflation raised the projected capital costs of Syncrude from $650 million at the end of 1972 to $1 billion in 1973.[70] Chastko writes that the requirement for the oil industry to adhere to the CDC and FIRA, "represented a slap in the faces of the multinational oil companies like Sun Oil who had invested much time, energy, and money in the oil sands."[71] Lougheed described it as "the most discriminatory action taken by a federal government against a particular province in the entire history of confederation," and introduced new legislation, unilaterally declaring that royalty rates would rise with the price of oil.[72] Chastko argues that the industry was not happy about Lougheed's royalty reforms but that with the creation of Petro-Canada, Pierre Trudeau "drove the industry and province into the arms

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[68] Prime Minister Pierre Elliot Trudeau, in Canada Hansard December 7, 1974, 1st session, 29th Parliament, 8479, In Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 152.
[69] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 152.
[70] Science Council Report, "Decision Making in the North: Oil Sands Case Study, November 1974" (Vancouver: Canadian Resourcecon Limited, 1974), 22. And National Energy Board, "Potential Limitations of Canadian Petroleum Supplies," December 1972, GA CPA Box 44 File 534, in ibid., 146.
[71] Ibid., 154.
[72] Premier Peter Lougheed, in *Alberta Hansard*, 1st Session, 29th Parliament, vol. 2, 7239. In ibid., 155.

of one another."[73] In Alberta, the industry that Lougheed had sought to closely regulate and control became a closer ally than the federal government. Alberta's anger towards the federal government and budding intimacy with the U.S. oil industry would in future ensure the continental, rather than national, orientation of the oil sands industry. Trudeau's nationalization efforts polarized Canada and infuriated Albertans to the point where they launched the "Let the Eastern Bastards Freeze In the Dark!" bumper sticker campaign, a bold manifestation of federal-provincial and east-west rivalries. Lougheed invested further in the success of development, creating the Energy Breakthrough Project budgeted at $100 million and the Alberta Oil Sands Technology and Research Authority (AOSTRA), a crown corporation funded by the province that operated collaboratively with industry to promote the development of technology.[74]

On 4 December 1974 Atlantic Richfield Canada (ARCAN) withdrew its 30% equity from the Syncrude consortium because its investments in Prudhoe Bay, along with reductions of exports and rising costs, inhibited its ability to support the Alberta synthetic oil project.[75] The withdrawal pushed both governments into a corner. The pressures of rising fuel prices and energy security at the national level, and the threat to survival of the main hope for the oil sands industry at the provincial level impelled major investments from Canadian governments to bail out the Syncrude project. Previously on the margin of the oil industry, synthetic oil was again moved by crisis to the forefront of Canadian energy strategy. The OPEC price shocks accelerated the Syncrude project and

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[73] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 156.
[74] Alberta Department of federal and Intergovernmental Affairs, "The Alberta Oil Sands Story" (Edmonton: government Printer, 1974).
[75] Don R. Getty, Alberta Minister of Energy and Natural Resources, to W. A. Posehn, 30 May 1975, 82.165, file. 49, PAA.

marginalized regulatory details as oil supply security quickly trumped all else through the 1970s.

The withdrawal of ARCAN crippled the Syncrude project and prompted the Alberta government to canvass all Canadian provincial governments for investment, seeking a minimum 5% equity position. All provinces other than Ontario turned down the offer citing a lack of finances or a distrust of the project's viability.[76] Following the negotiation of a memorandum of agreement in Winnipeg, Manitoba on 3 February 1975, the federal government invested in the estimated $2 billion project at 15% ($300 million), the government of Alberta at 10% ($200 million), and the province of Ontario at 5% ($100 million). The agreement freed Syncrude from any potential pro-rationing, and guaranteed international prices and access to markets. The government of Alberta also loaned Canada-Cities (Cities Service) and Gulf Canada $100 million each, and under paragraph (e) of clause 2 agreed to provide all infrastructure and financing of the Athabasca River Bridge up to $7.8 million.[77] Alberta also agreed to complete ownership and operation of the Syncrude Utilities Plant by the Alberta Energy and Utilities Company. The Utilities Plant was a 160 MW combined cycle steam gas fired generator that cost $225 million. Through equity, loans and infrastructure, the Alberta government initially invested over $537 million in the Syncrude project.

The Winnipeg agreement established Syncrude Canada Ltd as the corporate shell to operate the lands and facilities of leases No. 17 and No. 22, with all operating profits and losses managed by partner shareholders. The signing of the Winnipeg Agreement

[76] Correspondence between the Alberta government and other Canadian provincial governments, in 82.165 vol. 48 pt. 1, PAA.
[77] Syncrude Project, *Winnipeg Agreement*, Winnipeg Manitoba, 3 February 1975, 82.165 vol. 49 file 440, PAA

was met with widespread support in Alberta, and even Social Credit Opposition Leader Bob Clark commended the agreement.[78] The Winnipeg agreement financially committed the three governments, and especially the government of Alberta, to the success of the oil sands industry, as its 36% royalty was calculated on net profits.[79]

Figure 7: Unknown Photographer, "Construction of the Syncrude plant," Alberta (Winter 1976), 35mm negative, Imperial Oil Archives, IP 65, GA. Used with permission.

Federal Energy Minister Donald MacDonald touted the Winnipeg agreement as a success, stating "the survival of the troubled Syncrude project is, indeed, a milestone in the development of Canadian energy policies. It made it possible for us to keep our options open by maintaining access to one of the world's richest oil deposits, the tar

[78] Bob Clark, Leader of the Opposition, government of Alberta, *Alberta Hansard*, 4 February 1975, 321.
[79] Net profit = gross revenue – operating costs, depreciation, and deemed interest expense. Canadian Petroleum Association to Alastair Gillespie, Minister of Energy, Mines and Resources, government of Canada, "An Assessment of Royalty Treatment and Other Factors Impacting Oil Sands Development." R1526 vol.267 file no.6 file.243-14, LAC.

sands."[80] For Alberta, the Syncrude equity was a high-risk investment that involved the expenditure of significant public finances that would not be recovered if the project were to fail, that compromised cautious regulation of the environmental dimensions of the oil sands industry. Without investments, government would not be required to account for money spent, and would therefore be in a less committed position.

Immediately on coming to power, the Lougheed government sought to maximize resource rents. The combination of rising prices, royalties and new exploration, raised oil revenues from $516 million in 1973 to $2.7 billion in 1977. The Alberta government formed the Alberta Heritage Savings Trust Fund in May 1976 with an initial investment of $1.5 billion with an annual investment of 30% of the province's non-renewable resource revenues. In the first few years of the fund, the province's major investments were the Syncrude project, research investments in new oil sands extraction technologies, creation of the Alberta Energy Company, irrigation infrastructure, the Alberta Housing Corporation, and medical research facilities. Lougheed also created the Oil Sands Study Group to consult with industry and guide provincial policy. The Heritage Fund was established by cabinet, in a government that Richards and Pratt argue was "run like a centralized business, with cabinet functioning as a board of directors."[81] The Alberta Energy Company was a collaboration between public and private interests, with 50% of its shares held by the provincial government and 50% held by private investors, for the purpose of direct participation in Syncrude and other natural gas projects. Lougheed wrote to a citizen, David Mitchell, that his vision was to introduce "substantial direct citizen ownership" that would "provide added stimulus and accountability for results that

[80] Statement to the Press, by Donald MacDonald, 27 February 1975, in RG19 vol.6693 file 4445-15 pt.6, LAC.
[81] Richards and Pratt, *Prairie Capitalism: Power and Influence in the New West.* : 241.

are inherent in the private system."[82] To get direct citizen ownership Albertans were sold AEC shares in November 1975, and within two weeks all 7.5 million ten-dollar shares had been sold.[83]

Construction commenced on the Syncrude project in early 1976 and the plant was operational by 1978. The Syncrude plant used draglines in conjunction with bucket wheels to strip overburden and mine the deposit and processed 17,000 tonnes of bitumen per day. The Syncrude plant was marginally more efficient than the GCOS plant, but neither plant could recover marketable liquid hydrocarbon products greatly exceeding 60% of the total energy input, that is, of energy contained in all mined oil sand and in supplementary oil and natural gas supplies to the operation.[84] The Syncrude project required a 28 square kilometre tailings pond over its life. The upgrader used two 10,300 tonne per day fluid cokers, designed to be a ten per cent improvement over the GCOS coker.[85]

The Iranian Revolution and the National Energy Program

Crisis again boosted the oil sands industry in 1978. The Iranian Revolution broke out when the U.S. backed Shah Reza Pahlavi was overthrown by Ayatollah Ruhollah Khomeini and the price of oil increased from $14 to $34 U.S. per barrel. High prices and feared supply shortages proved again the power of oil markets to shape the Alberta

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[82] Peter Lougheed to David Mitchell, October 9, 1974, in ibid.
[83] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 160.
[84] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.
[85] C. W. Bowman, Chairman, Alberta Oil Sands Technology and Research Authority, and G. W. Govier, Chief Deputy Minister, Department of Energy and Natural Resources, "Status and Challenges in the Recovery of Hydrocarbons from the Oil Sands of Alberta, Canada," Conference Presentation, *Tenth World Energy Conference*, 19-24 September 1977, in R1526 vol. 267 file no.5 file.243-14, LAC.

synthetic oil industry. Tensions raged between Edmonton and Ottawa, and the U.S. majors including Shell, Imperial, and Gulf, began planning new oil sands projects.[86] Though Trudeau's energy policies were briefly threatened during the short-lived government of Progressive Conservative Prime Minister Joe Clark from June 1979 - March 1980, Trudeau promptly returned to office and appointed Marc Lalonde as Energy Minister. Trudeau worked quickly to lower prices to what he called a "made in Canada" price that was significantly lower than the world price, which fluctuated around $20 U.S. per barrel at that time. This enraged oil sands producers and the Alberta government, as oil sands production, when the technical difficulties were factored in, cost $30 per barrel in 1979.[87]

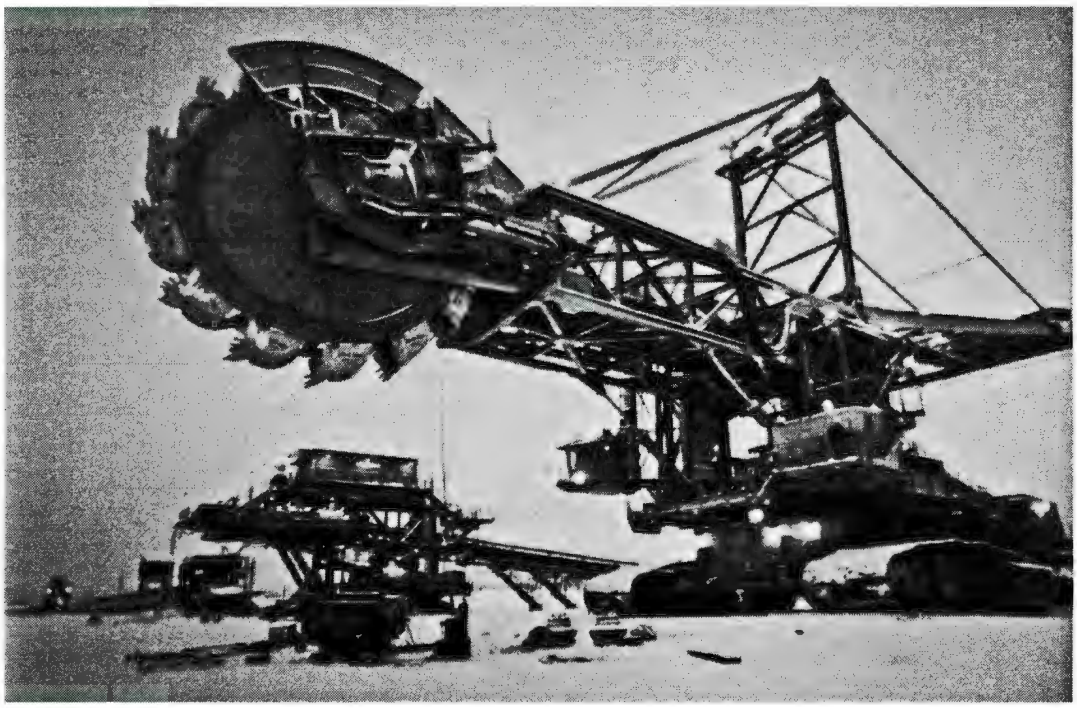

Figure 5: Alan Orling, "Bucket reclaimer (full view) at Syncrude Facility in Alberta, Canada. Oil Sands operation," (Winter 1978), Large-format negative, Imperial Oil Archives, 82-1020/002 (06), GA. Used with permission.

[86] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*: 168.
[87] Ibid., 168.

Following the price increases and conventional supply shortages that came with the Iranian Revolution, oil sands projects became much more profitable and appealing to investors. The GCOS – Sun Oil merger formed Suncor in 1978, and after expanding its operations in 1979, Suncor claimed $259 million in profits in 1980.[88] A policy brief in the federal finance ministry expressed that "continued access to international prices would yield substantial benefits to the company which significantly exceed those envisaged at the time the agreement was put in place."[89] By late 1979, seventeen of the twenty-five largest oil and gas producers in Canada, accounting for 75% of production, were foreign owned and controlled. The finance ministry reported that this amounted to $3.7 billion dollars in capital outflow.[90] For the Trudeau government, the combination of major foreign ownership in the oil and gas industry, the near exclusive accrual of resource rents to provincial coffers, the rising price of oil, the rising cost of increasing oil imports, and general global threats to national supply prompted the creation of the National Energy Program shortly after returning to power in 1980.[91]

In the introduction to the NEP, Lalonde stated that "In Canada, one provincial government - not all, and the national government - enjoys most of the windfalls under current policies," and that "these policies are no longer compatible with the national interest."[92] The NEP set out to achieve supply security and independence from the world market, and to generate national, rather than exclusive provincial, public benefit by

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[88] "Suncor Profit," Ft. McMurray Express, 8 April 1980, Alsands Press Clippings, GA.
[89] Department of Finance "Suncor – Policy Brief," 6 November 1980, in RG19 vol. 6004 file 4462-8-4 (fp.1), LAC.
[90] Department of Finance, Draft NEP brief, in RG19 vol. 6004 file 4462-8-4 (fp.1), LAC.
[91] The Trudeau Liberal government quickly returned to power after defeating Joe Clark's Conservative government in early 1980 in an election that followed from a confidence motion moved against the Clark government by Bob Rae. And Marc Lalonde, "The National Energy Program," ed. Department of Energy and Natural Resources (Ottawa: Minister of Supply and Services, 1980).
[92] Lalonde, "The National Energy Program," 2.

drawing greater federal revenue and creating incentives for Canadian exploration companies. Bruce Doern and Glen Toner argue that Lalonde crafted the NEP "to alter the structure of power between Ottawa and foreign-owned energy interests in particular, and between Ottawa and Alberta."[93] The NEP was essentially a high stakes bet on increasing oil supply shortages and continually increasing prices through the 1990s. In a March 2012 interview, Marc Lalonde explained the certainty with which he perceived the increasing price of oil as a sound basis on which to build the NEP:

> If the price of oil and gas had continued according to our expectations and forecasts, and these were not "pie-in-the-sky" forecasts, I remember the president of Occidental Petroleum talking about 100 dollar oil by 1986, and he was not considered a fool, and I remember the economic council of Canada saying 'what is the government going to do with all that money that it will be getting?' So, everybody more or less expected a rapid escalation of prices, which didn't take place.[94]

The program was enacted through massive intervention in Canada's economy by the increase of federal taxes to exert greater federal control over oil production, the elimination of depletion allowances, the creation of the Consumer Price Index (CPI), Petroleum Incentive Payments (PIPs), and the granting to Petro-Canada the "back-in" clause that would give them an automatic 25% ownership stake in every new oil development.[95]

It is difficult to overstate the polarizing effect of the NEP in Alberta. Chastko quotes an article from *The Calgary Herald,* which opined that the NEP was "incredibly

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[93] G. Bruce Doern and Glen B. Toner, *The Politics of Energy: The Development and Implementation of the NEP* (Methuen, 1985). 433. For broader analysis of the NEP see G. C. Watkins and M. A. Walker, ed. *Reaction: The National Energy Program* (Vancouver: Fraser Institute, 1981), and Larry Pratt "Petro-Canada" *Privatization, Public Policy and Public Corporations in Canada*, ed. Allan Tupper and G. Bruce Doern (Halifax: The Institute for Research on Public Policy, 1988).

[94] The impact of the NEP is an incredibly controversial topic in Alberta. I sought an interview from Peter Lougheed, but my request was denied because of his declining health, and he passed away in September 2012. Marc Lalonde, Interview with Author, March 2012.

[95] Lalonde, "The National Energy Program," 16-22.

lofty and patronizing for a government document in a democratic country."[96] The TSE oil and gas index dropped over 800 points marking approximately $2.3 billion in capital flight. The announcement of the NEP resulted in diplomatic pressure from the U.S. and the threat of a capital strike from industry.[97] On 5 November 1980, William Daniel, President and CEO of Shell Canada Ltd, told the Edmonton Chamber of Commerce, "the announced new federal policies will require wrenching adjustments within the industry which I believe will seriously impair our hopes of developing the volume of new supply that will enable us to attain oil self-sufficiency in the foreseeable future."[98] For Suncor, the response was even more negative, as spokesman R.A. Hennigar stated, the NEP "returns our oil sands operation to a marginal proposition and appears to run counter to National Policy goals."[99] In the United States, the federal government indicated serious concern about the 25% Crown interest in all oil rights on Canada lands. The U.S. government wrote in a policy statement, "The implementation of this aspect of the Program will be viewed by the United States government in the context of international law and United States policy on expropriation."[100] A subcommittee of the Committee on Energy and Commerce reported that

> In the near term, one effect of the proposed NEP has been that U.S. companies have drastically lowered their exploration budgets in Canada. This will almost certainly reduce Canadian petroleum production in the years to come and, if world supplies again tighten, the absence of some

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[96] Editorial, "The National Energy Program," The Calgary Herald, October 29, 1980, A20. In Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 184.
[97] J.C. Philips, Chairman of the Boards, Gulf Canada Limited, to Pierre Elliott Trudeau, 5 December 1980, in RG19 vol.6005 file4462-08-7 (pt. 1) NEP Industry Reaction, LAC.
[98] C. William Daniel, President and CEO, Shell Canada Ltd. "The National Energy Program – Security, Opportunity, Fairness?" Address to the Edmonton Chamber of Commerce, 5 November 1980, in RG19 vol.6005 file4462-08-7 (pt. 1) NEP Industry Reaction, LAC.
[99] R.A. Hennigar, "Suncor Presentation to the government of Canada," 1980, in RG19 vol.6005 file4462-08-7 (pt. 1) NEP Industry Reaction, LAC.
[100] United States government, Policy Statement – NEP, 5 December 1980, in RG19 vol. 6004 file. 4462-08-4 (pt.1) Energy – Oil and Gas – Sector and Policy – National Energy Program, Foreign Views, LAC.

> increment of Canadian production would tend to place upward pressure on prices.[101]

Philip Wood, Executive Vice President, Finance and Administration, of Cities Service, speaking to the U.S. Congressional committee on Energy and Commerce referred to the NEP as a xenophobic piece of legislation that allowed Canada to expropriate U.S. energy firms.[102] The NEP had a profound impact on the oil and gas industry during the year it took to work out an agreement between the federal government and Alberta. Lalonde described it in this manner: "In a way the Industry was caught in a sandwich between the federal and provincial government for a year until we made a new deal, and no doubt the industry suffered at that time."[103] The NEP was an unprecedented intervention in any Canadian resource industry. Lougheed responded by announcing a fifteen per cent supply cut to the rest of Canada.

In under a year, a Memorandum of Agreement was signed between the federal government and the government of Alberta on 1 September 1981, which included a modification of PIPs to give Alberta greater control declared,

> The government of Alberta and the government of Canada believe that the combination of royalties and taxes described in this Agreement, coupled with the new Oil Reference Price for the products from the two projects, will generate adequate rates of return on investment for the large Canadian or foreign companies participating in the Alsands and Cold Lake projects...[104]

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[101] John D. Dingell, Chairman, to Members and Staff, Subcommittee on Oversight and Investigations, "Re: Briefing Memo – Hearing Friday, Jun 19th, re. Impact of Canadian Energy Policies on U.S. Oil Companies." Congress of the United States House of Representatives Subcommittee on oversight and Investigations of the Committee on Energy and Commerce, Washington, D.C., 18 June 1981, in RG19 vol.6005 file4462-08-7 (pt. 1) NEP Industry Reaction, LAC.

[102] Statement of Philip W. Wood, Executive Vice President, Finance and Administration Cities Service Company, Before the subcommittee on oversight and investigations, House committee on Energy and Commerce, Washington, D.C., 19 June 1981. In RG19 vol.6005 file4462-08-7 (pt. 1) NEP Industry Reaction, LAC.

[103] Marc Lalonde, Interview with Author, March 2012.

[104] "Memorandum of Agreement between The government of Canada and the government of Alberta relating to Energy Pricing and Taxation, September 1, 1981, in RG10 vol. 14096 file. E4588-8-R6-5 pt.6 Natural Resources – Resource Development Impact, Heavy Oil/Tar Sands.

The agreement became widely known as the 'Champagne Agreement' after a photo of Trudeau and Lougheed toasting champagne to the signing of the MOA was widely circulated in Canadian newspapers. Although Lougheed later said that allowing this photo to be taken was one of the worst mistakes of his political career, the agreement was a diplomatic success that may have had the potential to ease east-west tensions that dominated much of Canadian politics in the 1970s.

The potential success of the NEP, and the mutually beneficial terms of the Champagne Agreement rested entirely on continuing long-term oil price increases. Marc Lalonde asserted that "if that forecast had materialized, I think everybody would have been happy, Mr. Lougheed would have been happy, with his increasing one third coming in, and the industry would have been wealthier than ever with its own one third which would be coming in from higher prices..."[105] In September 1980, shortly after the signing of the Champagne Agreement, the Iran-Iraq war began, and non-OPEC producers moved to sell below world prices. Demand for OPEC oil dropped twenty-seven per cent, and, in 1982, global oil prices collapsed. In Canada, dwindling conventional supplies meant that creating domestic supply security was dependent on a synthetic oil industry that was again sub-economic, or on imports that were becoming cheaper. Paul Chastko presents a view that is common in Alberta that the "NEP gutted the Alberta oil patch and severely jeopardized the country's future..." and resulted in a "counter-cyclical swing..." that deprived the oil patch of "revenues necessary to sustain growth and expansion, particularly in the oil sands."[106] The NEP prompted significant capital flight that threatened exploration and new projects, but the GCOS and Syncrude plants were sunk

[105] Marc Lalonde, Interview with Author, March 2012.
[106] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 128.

costs for their investors and were not as compromised by the NEP price freezes as they were by world price collapse in 1982. The impact of the NEP, though not to be underestimated, must be separated from the impact of falling world prices to accurately assess the stagnation of the oil sands industry in the 1980s.

By 1982 the multibillion-dollar Alsands project was on the rocks. Modelled similarly to Syncrude, Alsands was a consortium-funded project to strip-mine a bitumen deposit on the east side of the Athabasca River across from Fort McKay. By 1982, five companies representing a 50% interest in the Alsands consortium withdrew from the increasingly risky project.[107] Peter Foster reported in *Canadian Business* magazine in April 1982 that "as a direct result of the OPEC glut, a number of oil companies have been hoisted on their own free-enterprise petards... The risks particular to energy projects are already apparent and they are proving daunting to many lenders."[108] As a last ditch effort, the government of Alberta and the federal government each took a 25% equity stake in the Alsands consortium, in an investment estimated to be worth $14 billion.[109] On 30 April 1982, the Alsands partnership collapsed and the project was cancelled.[110] The collapse of global oil prices and the failure of the Alsands project demonstrated the power of oil prices to influence human designs on the Athabasca bitumen deposits, and the inability of individual governments to skew the forces of international oil markets.

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[107] "Lalonde Clarifies Position of Alsands; Officials Meet In Edmonton," *Daily Oil Bulletin*, 26 February 1982, in Alsands Press Clippings M-6328 Box. 1, GA.
[108] Peter Foster, "Risks: unknown, This big question in energy financing isn't who's got the money. It's who will assume the risks that seem to be getting steeper by the day," *Canadian Business*, April 1982, Alsands Press Clippings M-6328 Box. 3, GA.
[109] "governments offer to take 25% each of Alsands," *Daily Oil Bulletin*, 30 April 1982, and David Hatter and Yvonne Zacharias, "$14-billion rescue bid: Alsands tossed a lifeline," *Calgary Herald*, 30 April 1982, in Alsands Press Clippings M-6328 Box. 3, GA.
[110] Peter Foster, *The Sorcerer's Apprentices: Canada's Super-Bureaucrats and the Energy Mess* (Canada: Harper Collins, 1982), 200-01.

Following the collapse of oil prices in 1982, the strip-mining of the Athabasca bitumen deposits stagnated with no new projects moving ahead until the late 1990s. The CanStar project was abandoned later in the decade as world oil prices dropped from $31.75 per barrel in November 1985 to $10 per barrel in early 1986.[111] In 1987, despite higher production, fewer technical problems and lower costs, Syncrude reported substantially lower revenue because of low prices. In 1984, amidst the political fallout from the NEP, Trudeau was defeated and Brian Mulroney's Conservative Party formed government. In Alberta, Peter Lougheed stepped down in 1985. On taking power, Mulroney worked quickly to reverse Trudeau's energy program. Canada ratified the Canada-United States Free Trade Agreement (CUFTA) in 1988, eliminating any future possibility of protectionist energy policies. The signing of the CUFTA essentially achieved the exact opposite of the intent of the NEP. The NEP had sought to orient the geography of the Canadian energy system along an east-west axis to serve national markets, with more participation by Canadian companies and the building of the Montreal Pipeline. With CUFTA, and the greater intimacy of the oil and gas industry with the Alberta government following reaction to the NEP, the removal of trade barriers guaranteed that Alberta synthetic oil would primarily flow over the U.S. border.[112]

Conclusion

During the first development phase of the oil sands industry between 1967 and 1982, the Alberta synthetic oil industry came to prominence as a crisis fuel funded largely by investments from the United States oil industry. In the early 1970s, the newly

[111] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 749-50
[112] Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*, 180.

elected Lougheed government pursued a policy of rational planning to ensure maximum accrual of socio-economic benefits to Albertans from oil sands development and minimize social and environmental impacts by regulating the investments of foreign companies. With the OPEC crisis, the stakes changed as domestic energy security emerged as the new governing factor in the planning of oil sands projects. In response, the Alberta government began to participate in the industry by investing to save the Syncrude project. In doing so, Alberta emerged as an investor in the oil sands industry, becoming an aggressive entrepreneurial actor that worked to profitably develop the Athabasca bitumen deposits. The commitment of the Alberta government to oil production produced a degree of regulatory capture by the mid-1970s that marginalized effective regulation of the environmental impacts of the industry. Following even greater price increases by the late 1970s, the federal government intervened in the Alberta oil industry to protect Canadian consumers and to balance the accrual of resource rents, while investing in the success of the oil sands industry to try to achieve energy independence.[113] The resulting National Energy Program enacted in 1980 was an unprecedented attempt to regulate a Canadian resource industry that increased the cost of exploration and new oil developments. The oil price collapse in 1982 led to the failure of the Alsands project, the defeat of the Trudeau government and the stagnation of the oil sands industry, though the Syncrude and Suncor plants continued to operate.

[113] Though with uranium and the CCF's approach to northern resource development significant levels of national control were also apparent. Quiring, *CCF Colonialism in Northern Saskatchewan: Battling Parish Priests, Bootleggers, and Fur Sharks*, Peter C. Van Wyck, *The Highway of the Atom* (Montréal: McGill-Queen's University Press, 2010), Keeling, "'Born in an atomic test tube': landscapes of cyclonic development at Uranium City, Saskatchewan," and Piper, *The Industrial Transformation of Subarctic Canada*.

CHAPTER TWO

Development, Regulation, and Environmental Change in the Athabasca Oil Sands Region

The oil sands industry had significant and increasing adverse ecological impacts on the Athabasca oil sands region from construction, mining, the rapid increase in population, and from air and water pollution. Between 1970 and 1971 the Social Credit government took steps to establish environmental policies and regulations in Alberta, such as becoming the first provincial government to establish a Department of Environment in 1971. The Lougheed Conservatives initially maintained this approach, following a strategy of cautious development, establishing environmental policies and regulations, and beginning environmental research on the region and the impacts of oil sands projects to ensure that Alberta received maximum benefits and minimal negative impacts from the oil sands industry. As the OPEC crisis emerged and produced an oil development imperative in Alberta and Canada, the Alberta government's focus on environmental regulation was sidelined by the mid-1970s. Once the Alberta government took equity in Syncrude in 1975, and made major investments in industry infrastructure, it became saddled with conflicting mandates as both developer and regulator of the resource. The Syncrude equity put the government of Alberta in a potential conflict of interest position that may have negatively impacted regulation of the industry and government commitments to environmental research. The marginalization of environmental regulation socialized the environmental risks and impacts of the oil sands

industry and had drastic consequences for ecosystems and Indigenous communities in the oil sands region.

Government correspondence dating to the late 1950s indicates federal and provincial scientific concern for the environmental impacts of the oil sands industry. On 1 April 1959 D. S. Montgomery, a senior scientist in the federal Department of Mines and Technical Surveys wrote to Dr. P. A. Koller in the economic division of the Department of Northern Affairs and National Resources expressing concern with technical problems but also with the lack of environmental planning in the GCOS proposal. He wrote that "very little has been said beyond merely mentioning the waste disposal systems to ensure the preservation of aquatic life in the Athabasca river, a factor of prime concern to the Department of Northern Affairs."[1] By early 1960, Dr. Koller was also aware of the intent of GCOS to produce 25,000 pounds per hour of sulphur dioxide, and that these emissions would have "a devastating effect on the vegetation in the whole area," and that the "resulting sand dunes would present a considerable danger to surrounding areas in that region." Dr. Koller wrote that while GCOS had said that they had an agreement with Alberta health authorities, "an Inquiry by the Conservation Board, however, indicated that these health authorities have not heard anything from the Great Canadian Oil Sands Limited."[2] The primary concern was with the dubious logistics of the GCOS project, and with the potential environmental impacts on the region. It is unclear from this file what broader interest Northern Affairs and National Resources had in the potential environmental impacts of the oil sands industry.

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[1] D. S. Montgomery, Department of Mines and Technical Surveys to Dr. P. A. Koller, Department of Northern Affairs and National Resources, 1 April 1959, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.
[2] Dr. P. A. Koller to Dr. Jennes, Department of Northern Affairs and National Resources, 23 June 1960, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.

Prior to the environmental movements of the 1970s and the creation of environmental agencies at federal and provincial levels, environmental protection concerns pertaining to oil sands development were mainly couched in terms of protecting waterfowl under the 1916 *Migratory Birds Convention Act* as well as concern for National Parks, and game regulations at the federal level.[3] At the provincial level, environmental monitoring and regulation was conducted by the Department of Health. A letter from Deputy Minister of Northern Affairs and National Resources E. A. Côté to GCOS President W. H. Rea regarding water safety in synthetic oil production cited the potential impacts on birds. Referring to the 1916 *Migratory Birds Convention Act* with the United States, Côté wrote, "The many species of migratory birds are of interest and use to farmers, naturalists, hunters and, indeed increasing numbers of Canadians of all populations." The letter emphasized that "tens of thousands of ducks and geese and thousands of whistling swans" use the water areas of the Peace-Athabasca at the west end of Lake Athabasca as a regular stopping point on spring and fall migrations. He recommended that water be treated as much as possible before being released into the watershed, and that the Canadian government "will be most appreciative of any special precautions you may be able to arrange that would minimize the chances of release of oil."[4] Rea responded to Côté with a guarantee, "you can be sure that our Company will co-operate in every way with you to avoid injury to the Wildlife of our country."[5] Early

[3] Conservation sensibilities have been traced back to the Thirteen Colonies. Richard William Judd, *The Untilled Garden: Natural History and the Spirit of Conservation in America* (New York: Cambridge University Press, 2009), Richard William Judd, *Common Lands, Common People: The Origins of Conservation in Northern New England* (Cambridge, Massachusetts: Harvard University Press, 1997), and Tina Loo, *States of Nature: Conserving Canada's Wildlife in the Twentieth Century* (Vancouver: UBC Press, 2006).

[4] E. A. Côté, Deputy Minister of Northern Affairs and National Resources to W. J. Rea, President, GCOS, 12 November 1965, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.

[5] W.J. Rea to E. A. Côté, 22 November 1965, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.

the next year GCOS again wrote Côté to assure that "we have incorporated extensive facilities in our plant for containment of waste components, both of a routine and an accidental nature, to avoid any adverse effects on migratory wildlife."[6] The Department of Northern Affairs and National Resources were fulfilling due diligence under the MBCA, but their efforts did not mention the people who lived, and continue to live, on or near the Athabasca bitumen deposits, and historically relied on the air, water, birds, fish, animals, vegetation and general environmental well being of the region for survival.

In early 1968 reports of an oil spill prompted inquiry from Northern Affairs to GCOS. Arthur Laing, Minister of Indian Affairs and Northern Development, wrote to Rea, citing the 1965 letter from Côté and the 1966 guarantee from Thayer, expressing concern about reports of extensive seepage of oil into the Athabasca River from the RCMP and Dr. J. D. Ross, Alberta Minister of Health. He wrote that the government was aware that "oil, phenols and arsenic are escaping from the "scavenger cells" (secondary retaining ponds designed as backup), from a retaining pond with a broken earthen dyke, and from a seventy-acre dry wash that has been flooded with heavy crude oil."[7] With slight mention of "other renewable natural resources," Laing cited the importance of the *Migratory Birds Convention Act* in emphasizing cleanup and the prevention of future incidents. K.F. Heddon from GCOS wrote to Jean Chrétien, Minister of Indian Affairs and Northern Development, on 23 September 1968 describing the oil spill,

> During the night of November 30, 1967, with temperatures of -20°F, we experienced a complete failure of our steam and power plant with no advance warning of any type. All electric lights, power, steam, etc., failed at our refinery processing units. Plant personnel were working in the dark endeavouring to avert process and equipment failures and, obviously, with

[6] C. Thayer, President, GCOS to E. A. Côté, 20 January 1966, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.
[7] Arthur Liang to W. J. Rea, 13 May 1968, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.

> an emergency of this magnitude, were unable to cover simultaneously all the problems that arose under this type of circumstance.[8]

Heddon continued, explaining the magnitude of the failure and the unstoppable power of the discharge:

> Under these conditions major quantities of gas and petroleum liquids may be released to the emergency blow-drum and flare system. The gas streams are burned off safely and the liquids are collected in the knock-out drum and are recovered via the plant sewer and oil recovery facilities. However, in this instance, the drainage facilities from the knock-out drum were inadequate to handle the quantities of water and oil that were discharged. The excess oil and water flooded a low-lying area adjacent to the plant, overflowed across a plant road, and escaped under the snow blanket into an adjoining forest and muskeg area. Due to the contour of the land and heavy snow covering, it was not apparent that oil extended in significant amounts into this area.[9]

As the spill was essentially hidden, Heddon claimed it was unseen by plant operators and Alberta officials and thus not detected until spring runoff when it started flowing into the Athabasca river. GCOS built a dyke to prevent flow into the river, but admitted that it leaked considerably. Heddon wrote that the spill was eventually contained and the contaminated area dug out and backfilled with clean earth and sand to the satisfaction of Alberta officials.

Heddon also discussed the use of a "Vetrocoke Process" for the removal of carbon dioxide in the hydrogen plant, which used potassium carbonate in a water solution with arsenic trioxide, which was discontinued after the Alberta Department of Health found arsenic concentrations exceeding 0.7 parts per million in effluent water flowing into the Athabasca river from what was intended to be a closed system. Heddon admitted that up to 40 pounds per day of phenolic compounds were present in effluent flows to the

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[8] K.F. Heddon, GCOS, to Jean Chrétien, Minister of Indian Affairs and Northern Development, 23 September 1968, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.
[9] Ibid.

Athabasca River, citing an explosion and fire, which crippled the sour water stripping facilities used to process streams containing phenols. The letter concluded expressing concern that the incidents had occurred and an assurance to prevent the GOCS plant being a hazard to "river use and security of wild life in the river and beyond."[10] Though these reports discuss direct pollution of the Athabasca River, it is unclear how much the river was contaminated by these pollutants.

Cautious Development: 1967-1973

In the late 1960s and early 1970s environmental impacts such as the GCOS oil spill prompted backlash from the opposition against the Social Credit government for poor environmental regulation. Opposition MLA and future Environment Minister William Yurko told the press in 1971 that "the industry needs a whole new approach to pollution control." He asserted that classified details of the GCOS oil spill should be public knowledge: "the government has an excellent idea of what is contained in the effluent of most industries in Alberta. The general public should know what individual industries are doing to streams or to the air."[11] Such attacks from the opposition and increasing public awareness of environmental impacts put pressure on the faltering Social Credit government to adopt more serious environmental policy.

In 1970 the Strom government passed the *Environment Conservation Act* 1970 creating the Environment Conservation Authority, a public ombudsman on environmental

[10] K.F. Heddon, GCOS, to Jean Chrétien, Minister of Indian Affairs and Northern Development, 23 September 1968, in RG22 vol. 1334 file 40-3-36 vol. 1, LAC.
[11] "Reforms Urged for Industries' Pollution policy," Unlabelled Newspaper Article, 4 July 1971, in 72.59 file. 187, PAA.

issues.[12] The ECA was set up to review government policies and programs, inquire into matters of environment conservation, and report findings to the Lieutenant Governor in Council. The ECA had the power to access any information it felt necessary to carry out its duties, hold public hearings, hold meetings with public advisory committees, and engage experts. The ECA was an autonomous and significantly empowered authority for its time. Also in 1970, Strom established the Department of Environmental Improvement to manage conservation. In 1971, the same year that the Trudeau government created the federal Department of Environment, Alberta passed Bill 32 the *Department of Environment Act*, creating the Alberta Department of Environment. The Alberta Department of Environment was created for "preventing, controlling and stopping the loss, damage or pollution of air, water and land and plant and animal life, and for co-ordinating government action in matters affecting the environment."[13] The Department of Environment was granted significant powers in managing environmental issues, including Article 16, which empowered the Minister of Environment to administer 'Stop Orders' to deal with contraventions of the law, or to shut down plants or operations "in cases of actual or threatened pollution of the environment or destruction of or damage to natural resources." In the same year, Alberta passed Bill 40, the *Clean Water Act*, and Bill 41 the *Clean Air Act*. The *Clean Water Act* granted the Environment Minister important powers to impose water pollution regulations on industry. Article 3 allowed the minister to prescribe the "maximum permissible concentration in water of any water contaminant," that could be less, but not greater, than that prescribed by the provincial

[12] "The Environment Conservation Act," Legislative Assembly of Alberta, 1970, in M4755 file.709, GA.
[13] Lawrence Henderson, "Bill 32, The Department of Environment Act," Legislative Assembly of Alberta, 1971, in 78.77 box.1, PAA.

Board of Health and Article 7 granted the minister the power to issue stop orders.[14] The *Clean Air Act* was similar in scope to the *Clean Water Act,* though pertaining to air pollution. By 1971 Alberta was intent on meeting the rapid industrialization of the province with strict environmental regulation.

Alberta's environmental policy in the early 1970s seems to have been influenced in part by biblical notions of stewardship, a belief that humans were entrusted with control of the non-human natural world. Announcing the creation of the Department of Environmental Improvement on 24 October 1970, Harry Strom asserted that his government would use the new department to "maximize the benefits of resource utilization while at the same time preserving our rich natural environment."[15] During the planning of the Department of Environmental Improvement, A.R. Patrick made a statement to cabinet on the importance of conservation:

> There is no better way of giving our lives the dimension of depth than by identifying ourselves as important factors in the balance of nature and putting our weight on the side of conserving what is good, correcting what is wrong and progressing to something higher in the scale. We were put on this earth, according to the book of Genesis, 'to dress it and to keep it.'[16]

It is unclear to what extent religious influences prevailed, but they did factor in the logic that informed the structuring of certain early environmental programs.

Alberta's early environmental policy was also influenced strongly by the emphasis on utilitarianism that defined mid-century conservation. In 1971, H. W. Thiessen, Chairman of the Conservation and Utilization Committee, Department of Environment, drafted a "Natural Resources Policy Statement," that outlined the views of government

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[14] "Bill 40, The Clean Water Act," Legislative Assembly of Alberta, 1971, in 78.77 box.1, PAA.
[15] Premier Harry Strom, Press Release, 24 October 1970, in 78.77 box.1, PAA.
[16] A. R. Patrick, Statement to Cabinet, "Department of Environmental Improvement," August 1970, in 78.77 box.1, PAA.

on environmental protection.[17] Thiessen defined conservation as "a positive change in the rate of use in such proportion that the total product from the resource over time will be greater than if no change were made," and explained that the Alberta government's development strategy was, "in order to accentuate the cohesive aspects of man's relationship with his natural environment, and thereby strengthen the affinity within society, it must expand its role in the conservation of natural resources within the full and dynamic framework of the term." Though some of Thiessen's policies were questionable, he recognized at this early juncture that the "market system does not adequately provide the environmental maintenance mechanism," and that the government would need to draft carefully considered environmental regulations to achieve its goals.[18] Though lacking important research, Alberta in the early 1970s was intent on responsibly moving forward to an industrial future.

After coming to power, Peter Lougheed's Conservative government was advised in August 1972 by the Conservation and Utilization Committee to address the government's approach to environmental regulation in the oil sands region which it described in its "Tar Sands Development Strategy" as "poorly defined, inconsistent and totally lacking in cohesiveness."[19] The Committee stated that the development of the tar sands "should result in a net long term benefit and improvement to Alberta's physical and ecological environment." This logic was incorporated in the economic arguments of the importance of Canadian content and considered as important to sustainably developing the oil sands industry. The Committee wrote that the objective regarding the natural

[17] H. W. Thiessen, Chairman, Conservation and Utilization Committee, Department of Environment, "Natural Resources Policy Statement," 1971, in 78.77 box.1, PAA.
[18] Ibid.
[19] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.

environment should be to "enhance and improve it for subsequent land use after the extraction has been completed." The philosophies of reclamation in the early years of the oil sands industry were founded on the ideas of the Department of Environmental Improvement, that Alberta could mine the bitumen deposits and convert the former mine sites into arable farmland "a subsequent land use more beneficial to society than at present." The Committee advocated that serious water effluent and atmospheric emission controls be imposed "to the limits of technology in order that environmental degradation would be prevented."[20] The application of the best available, versus what industry termed the best practicable (most affordable), pollution control technology became a significant debate between government and industry, specifically concerning sulphur dioxide emissions. The oil sands industry often stated that it was too expensive to employ the best available sulphur dioxide capture technology, and thus the best practicable technology should be used instead, although less effective. Debates about environmental impact mitigation technology were significant throughout the evolution of the oil sands industry, and in other aspects of the oil and gas industry, especially in the extraction of sour gas.[21]

The Committee called for the Alberta Research Council to undertake research into bitumen extraction and processing, tailings disposal, reclamation and revegetation techniques, and suggested the industry be charged a research tax at 10¢ per acre. It noted the major problems with water management and tailings disposal, stating the need to restrict the area of impact, although it "anticipated that future mining applications will be restricted to the west side of the Athabasca River until tailings disposal and reclamation

[20] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[21] Keeling, "The Rancher and the Regulator: Public Challenges to Sour-Gas Industry Regulation in Alberta 1970-1994."

technology has advanced beyond the present state."[22] The Committee reinforced the importance of close management of the environmental dimensions of the oil sands industry noting that "since the environmental costs of these developments are extremely high and since the current technology and economies of extraction are still in their operational infancy, the tendency will be for the corporate structures to externalize these costs for society to absorb."[23] The Committee advocated the idea espoused at the time by Lougheed that development be slowed to achieve the balanced growth and environmental protection the government sought.

Perhaps the most important and historically significant environmental recommendation from the Conservation and Utilization Committee was for the "zoning and prohibition of mining and tailings sands disposals along the Athabasca River and other designated water courses required to be maintained to ensure the integrity of the watershed."[24] The Committee emphasized that there had not yet been any research into tailings disposal, reclamation or revegetation and that the apparent emphasis on "winning the resource" indicated "the heavy influence of the conventional crude oil industry." The Committee outlined major environmental problems associated with the hot water separation process and its massive generation of tailings. The Committee predicted,

> The downstream environmental effects on the Athabasca and Mackenzie River systems of the accidental release of enormous volumes of these wastes can only be considered with alarm... Continuation of this practice may not appear to have been a responsible method to succeeding generations of Albertans. In summary, it can be said that the hot water

[22] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[23] Ibid.
[24] Ibid.

> process with its concomitant tailings ponds will have a very adverse affect on the environment.[25]

The government did not at this point express awareness of the specific sorts of pollutants contained in oil sands effluent water, as environmental research was yet to be undertaken on a significant level, but basic concern with the assumed toxic qualities of effluent water was apparent. It concluded by emphasizing that the rapid development of alternative process methods should become a major priority of government. The time during which these recommendations were being seriously considered by the Cabinet coincided with the OPEC price increases that created oil supply shortages the Lougheed government could not afford to ignore. Moreover, this report was received shortly after the Syncrude Consortium had tabled its report on the economic and technological difficulties they were having planning the construction and operation of a second oil sands plant.

In its first years, the Lougheed government sought to carefully regulate all aspects of the oil industry and slow the process of development to minimize negative impacts. In 1972, the Alberta government also amended the *Alberta Environmental Research Trust Act* to orient environmental research towards minimizing the impacts of mining and oil sands operations, focusing research priorities on the disposal of mine waste and land reclamation.[26] An October 1972 *Globe and Mail* article reported that "the Alberta government will not permit large scale development of the Athabasca oil sands until the completion of a policy review on environmental guidelines next year... Lougheed

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[25] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.

[26] "Alberta Environmental Research Trust Amendment Act," *Alberta Hansard,* vol. 33, p.40, 24 April 1970, PAA.

prepared to slow development to ensure it goes ahead with best possible adherence to environmental protection."[27]

In 1973 environmental research began to be more seriously pursued at both the federal and provincial levels. In November of 1973 the Alberta Cabinet produced a memo titled "Alberta Oil Sands Management and Development - Research Phase," which sought federal involvement in environmental research. In December 1973 finance policy advisor S.S. Reisman wrote to the federal Minister of Finance calling for a $40 million investment in oil sands technology and promoted the creation of a research program to conduct photomapping, sedimentology, mandatory environmental engineering and geological studies by oil sands companies to minimize environmental impact, research to improve extraction processes, minimize effluents, and reduce sulphur dioxide emissions.[28] Later that year, the Alberta Research Secretariat was created as a Division of the Alberta Department of Environment to assume responsibility for research activities of the department. The division was provided with managers and staff to work with various other government agencies and scientific services in the department.[29] Although the development of the oil sands industry was prioritized, the Lougheed government took major steps in 1973 to build an environmental regime to regulate the industry.

However, Lougheed also introduced flexibility into his policies by not committing to a particular framework. He told *The Calgary Herald* that his government was "not going to come forward with any long term plan that commits our government to any particular royalty, public participation or other terms of reference that would tie our

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[27] "Big oil sands projects await guideline review," *The Globe and Mail*, 27 October 1972, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[28] S.S. Reisman to Minister of Finance, 3 December 1973, RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[29] Dr. A. Macpherson, Regional Director General, to J. B. Seaborn, Deputy Minister of Environment, 16 May 1980, RG39 box 76 file 6638-2-1-2-2 pt.1, LAC.

hands over the long term in the tar sands."[30] Lougheed had established that his government would evaluate each synthetic oil project on a case-by-case basis and would not agree to any pre-established terms. Environment Minister William Yurko introduced a "one-window concept" whereby all project assessments and approvals would be conducted through the ERCB, via individual government departments, such as the Department of Environment or Energy, Mines and Natural Resources.[31] By introducing the "one-window concept" Yurko improved the efficiency of project approvals but also centralized energy project decision-making in the ERCB, an arrangement that may have contributed to the marginalization of environmental concerns later in the decade.

Environmental regulation and the development imperative, 1974-79

With the major price increases and the development imperative produced by the OPEC crisis, the Alberta government's emphasis on slow development and careful environmental regulation was minimalized by the pressing need to produce oil. In the early 1970s, though GCOS had been operating since 1967 and other projects dated back much earlier, baseline ecological knowledge of the oil sands region was more or less non-existent. Larry Pratt cited an unnamed industry ecologist who told him "the government should have initiated ecological studies back about 1948 to monitor water flows, climate changes, soil conditions, temperature inversions, etc., on a long-term basis."[32] The only major survey of the environmental impacts was the 1973 "INTEG" report of Intercontinental Engineering of Alberta. The report stated that without the invention and

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[30] Kevin Peterson, "Prompted by energy crisis, Lougheed abandons long range tar sand policy," *The Calgary Herald*, 17 May 1973, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[31] William Yurko, *Alberta Hansard*, vol.40 p.2014, 10 April, 1973, PAA.
[32] Industry ecologist cited in Larry Pratt, *The Tar Sands: Syncrude and the Politics of Oil* (Edmonton: Hurtig Publishers, 1976), 104.

adoption of preventative measures, the environmental effects of multiple oil sands operations throughout the Athabasca oil sands region would be enormous.[33] Pratt cited senior Alberta government officials, who told him that development may well "turn the Fort McMurray area of north-eastern Alberta into a disaster region resembling a lunar landscape," and that strip-mining would turn the Athabasca region into a "biologically barren wasteland."[34] A 1975 report by the Science Council of Canada stated that knowledge and research of fragile northern ecosystems was incomplete, and that hasty collection of research after oil sands development decisions had been approved would not adequately fill knowledge gaps or build strong policy foundations. The report prescribed that development projects should always be preceded by significant environmental research.[35]

The environmental regulation of the oil sands industry was principally under Alberta jurisdiction, but the federal Department of Environment increasingly advocated for environmental regulation and restraint. On 16 January 1974, Jean Chrétien, Minister of Indian and Northern Affairs, wrote to Jack Davis, federal Minister of the Environment, to express concern about the expansion of the oil sands industry,

> With the commercial exploitation of the Athabaska [sic] tar sands an increasing possibility, I would like to record my concern about potential detrimental downstream effects of any major developments. Wood Buffalo National Park and other areas of the Northwest Territories would suffer from any serious pollution of the Athabaska River. In an analogous situation, we found ourselves acting too late in the Bennett Dam problem and we are still trying to ameliorate the downstream damages. If there is any action we can take to assist your people, or any joint actions we ought

[33] Intercontinental Engineering of Alberta Ltd., An Environmental Study of the Athabasca Tar Sands (Edmonton: Alberta Environment, March1973), in ibid., 102.
[34] Ibid.
[35] Science Council of Canada, Canada's Energy Opportunities, Report No. 23 (Ottawa: Information Canada, 1975), in ibid., 103.

> to be considering, to protect our interests in federal lands, I would be anxious to get underway as soon as possible.[36]

In a March 1974 letter to Jean Pierre Goyer, Minister of Supply and Services, Davis expressed his own concern, one of the first acknowledgements of the impact of the oil sands industry on communities in the region,

> Even if rapid development were financially and technologically feasible I am convinced that it could be environmentally disastrous. From overview studies carried out by my officers, it is clear that the area is inversion prone; under these circumstances, unless the sulphur discharges are rigidly controlled and monitored, the impact on the vegetation, water and even on the resident population could cause real problems.[37]

Davis wrote "present standards for minimum sulphur discharge may well be inadequate for the Tar Sands area," and that "that toxic materials, in particular sodium hydroxide which is added to disperse clay particles, will be discharged into tailings ponds, and through the ground water to the Athabasca and downstream to the Delta and the Mackenzie." He asserted that major development should not happen before the environmental effects were identified and existing technology improved.[38]

OPEC oil price increases and the supply security threats that emerged in 1973 and escalated into the early 1980s, dominated the decision making process that surrounded the development of the oil sands industry. Changes in Alberta government rhetoric through 1974 reflect the impact of increasing political and economic pressures to produce oil on environmental regulation. In an address to the Engineering Institute of Canada Conference on 17 April 1974 in Edmonton, Yurko publicly expressed concern about the risks of a poorly regulated oil sands industry. He called for government to collect data on

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[36] Jean Chrétien to Jack Davis, 16 January 1974, in RG108 vol. 284 file 4833-3 Water Pollution – Activities – Tar Sands, LAC.
[37] A temperature inversion is reversal of the normal decrease in temperature with altitude. Jack Davis to Jean Pierre Goyer, 24 March 1974, in RG108 vol. 284 file 4833-3 Water Pollution – Activities – Tar Sands, LAC.
[38] Ibid.

the region before it was further impacted by development. Yurko was sceptical that it would be politically feasible for any government to overcome economic dependence on oil production and stop oil sands development once skilled labour was trained, infrastructure built and construction began: "once the momentum of building oil sands plants is established, it will be sustained," he said.[39] In the legislative assembly, Yurko stated that in terms of environmental impacts, "I do say again, Mr. Speaker, at this time all we do know is there may be a problem in the future. We will be studying it with considerable intensity."[40] However Lougheed said the same day that the "general assessment we have at the moment is that in terms of development it's quite clear that the environmental situation can be adequately handled." Based on the assumption that his government had taken steps to protect the environment, "we would hope that... hon. members on both sides of the House would encourage the creation of new and meaningful jobs in this province."[41] Lougheed's rhetoric contributed to creating a false dichotomy between environmental protection and employment.

In 1974 Jack Davis was succeeded by Jeanne Sauvé as federal Environment Minister. Sauvé continued to hold that the environmental impacts of the oil sands industry were unacceptable, and advocated for rigorous environmental impact assessments of all oil sands projects. Writing to Yurko in December 1974 regarding the environmental dimensions of the Syncrude project, she affirmed that "if approval-in-principle is granted to the development proposal, the proponent should demonstrate through design measures that protection of the environment will be assured prior to a

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[39] William Yurko, "Address to the Engineering Institute of Canada Conference," (Edmonton, Alberta, April 17, 1974), in Chastko, *Developing Alberta's Oil Sands: From Karl Clark to Kyoto*: 163.
[40] W. J. Yurko, *Alberta Hansard*, p. 1442, 26 April 1974, PAA.
[41] Peter Lougheed, *Alberta Hansard*, p. 1443, 26 April 1974, PAA.

permit being issued for construction and operation." She asserted that she was not satisfied that Syncrude had "presented adequate quantification to reasonably permit a prediction of the environmental consequences of this development." She also advocated federal-provincial participation in a research program to correct existing information deficiencies to improve the predictive capability of government regulators to assess the cumulative effects of multiple plant operations on the environment.[42]

An exchange between Yurko and Sauvé regarding Environment Canada's critique of Syncrude's 1973 "Environmental Impact Assessment" report explicitly illustrates the development imperative produced by the OPEC crisis.[43] Sauvé wrote in a 1974 report that Syncrude had "failed to appreciate the real scope of environmental concerns and has also failed to address the question of environmental protection in either a realistic or adequate manner."[44] She stated that Syncrude's documentation "is deficient in detailed information in many areas of environmental concern and we believe that there is a likelihood for major environmental damage." Sauvé found the Syncrude Environmental Impact Assessment was

> ...wanting in quantitative data relevant to the existing ecosystem components (biological and physical) on Lease 17 and the Athabasca tar sands in general. The functional relationships of ecosystem components lacked quantification and specific aspects of the Syncrude development proposal lacked adequate clarification to effectively predict the ecological consequences of the project. In view of these voids in information, statements presented by the proponent relating to the environmental effects forecast from the development must be considered as conjectural...

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[42] Jéanne Sauvé to W. J. Yurko, 18 December 1974, in RG108 vol. 284 file 4833-3 Water Pollution – Activities – Tar Sands, LAC.
[43] Syncrude Canada Ltd., *Environmental Impact Assessment* (Syncrude: Edmonton, 1973)
[44] Environment Canada, "Memorandum and Correspondence Relating to the Syncrude Environmental Impact Assessment" (September, 1974), in Pratt, *The Tar Sands: Syncrude and the Politics of Oil*, 107.

Yurko, who had so forcefully advocated environmental protection in the early 1970s, responded to Sauvé stating that oil supply priorities outweighed environmental risks:

> Most of the deficiencies identified by your regional task force have also been identified by my staff. We know that major information gaps exist in respect to the baseline environmental data in the entire area. Nevertheless, in the light of Canada's critical energy balance, it did not and does not appear prudent to delay oil sands development until all needed information is available. We need to proceed and at the same time gather information with the premise that environmental restrictions may increase with each successive plant.[45]

The contrast to his earlier words in the decade, and at other junctures suggests the significant power of political and economic forces to shape government policies. By the end of 1974 environmental policy rhetoric from the Lougheed government had changed from the reserved tone of caution that characterised 1971 and 1972, to statements that expressed the risks of development but also the absolute necessity of mobilizing the industry.

Opposition MLAs argued that the Lougheed government's investment in Syncrude put it in a conflict of interest position that could corrupt its regulation of the environmental dimensions of the oil sands industry. As NDP MLA Grant Notley said in legislature in 1976,

> The Syncrude arrangement itself, in many respects, places the government of Alberta in virtually a conflict of interest position because we are now a major part of that project. The more stringent the environmental standards are, a portion of that cost will have to be met by the taxpayers of Alberta.[46]

Notley sought to pass a motion in the Legislative Assembly that would reduce allowed Syncrude sulphur dioxide emissions by amending permit number 73-AP-054 under the *Clean Air Act* from 287 long tons per stream day to 60, as technology existed to limit

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[45] W. J. Yurko to Jeanne Sauvé, 15 October 1974, in RG108 vol. 284 file 4833-3, LAC.
[46] Grant Notley, *Alberta Hansard,* 16 March 1976, p.196.

emissions to this level. He argued that permitted emissions were arbitrary and could not realistically prevent the environmental impacts of sulphur dioxide deposition. Conservative MLA Tom Chambers, challenged Notley's motion arguing that to change the technology criteria for the Syncrude plant would "be the height of irresponsibility." Chambers emphasized the reliance of many Albertans on the oil sands industry for employment, and the importance of the project to Canada. To attack Notley, Chambers exploited the false dichotomy that environmental protection initiatives inherently undermine employment opportunities: "In my view, those who would destroy the viability of the project by attempting to force needless and unduly harsh environmental standards are doing an immense disservice, not only to Syncrude, but to Alberta and to the Canadian nation as a whole."[47] In response to Chambers's attack, Social Credit Opposition Leader Bob Clark stepped in to support Notley with an extensive statement:

> One has to remember, when we look at the Syncrude plant in Alberta today, because of the corporate make-up of Syncrude now, that we find ourselves in a situation of having at least the potential for a public conflict of interest. I say that frankly, because the government, the people of Alberta, the Legislature have or will have over a billion dollars tied up in Syncrude. Look at the equity participation by the province. Look at the infrastructure in Fort McMurray, the road up to Fort McMurray, the contribution by the Alberta Housing Corporation, the power plant, and the pipeline. Let's face squarely what we're looking at here. We're looking at a project which I think the vast majority of Albertans want to see go ahead. But we're looking at a project which the government of the day, regardless of who the government is, now has got at least a billion dollars — likely closer to $1.2 billion — committed to this project. Very frankly, if the project has problems down the road, this government today has its political neck out some distance. If there isn't a good rate of return, if the project doesn't work well, let's face it, there's going to be tremendous pressure on the government of the day to make some adjustments. I think the first thing members on both sides of the House have to appreciate is this potential conflict of interest situation. There's no way we can simply say it isn't here. It is. The member who sits on the board of Syncrude made the point that the permit will be reviewed in, I believe, 1983. That is true.

[47] Tom Chambers, *Alberta Hansard*, 16 March 1976, p.201.

> But members of the Assembly, let's remember that in 1983, the Department of the Environment will be making recommendations as to what should happen to the permit. If Syncrude is having very serious problems at that time, let's not be so naive as to say there is not going to be pressure to make changes in the standards. If we recognize that, at least we're at first base. But it seems so many people in this province tend to gloss over that. I think that's why there are certainly some legitimate concerns by people when they look at this potential conflict of interest. Frankly it's one of the reasons I personally don't think we should be getting involved in more of these government/business partnerships... I think it is important that we recognize the conflict of interest situation is here, regardless of where we sit in the House. That's with us.[48]

Notley's motion was defeated by the majority Conservative government. But by criticizing the state/capital partnership that funded the Syncrude project, the opposition challenged Lougheed's strategy of industry control through participation.

The influence of the development imperative was apparent in the Alberta government's environmental regulation of the GCOS project. By 1975 GCOS was in dire straits. GCOS stated in a report to the Alberta government on 29 March 1976 that Sun Oil had injected a total of $332 million in additional funds and concluded that because of consistent losses and no return on past investments, Sun was not going to commit any further financing to the project.[49] GCOS cited several specific factors that were increasing costs that included: the poor reliability of the sulphur recovery plant, the costs of reducing particulate and sulphur dioxide emissions from the powerhouse, electrical requirements, sludge disposal and tailings settling, problems with land surface conservation and reclamation regulations, and the pressures of increasing environmental regulation.[50] The report provides a window to the technical challenges that the oil sands

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[48] Bob Clark, *Alberta Hansard*, 16 March 1976, p. 202-203.
[49] Great Canadian Oil Sands Limited, "Submission to the Honourable Don Getty, Minister of Energy and Natural Resources, Province of Alberta," 29 March 1976, in 82.165 file 466, PAA.
[50] Department of Energy and Natural Resources, government of Alberta, Notes Re. Great Canadian Oil Sands Submission of March 29, 1976 to the Alberta government," 21 October 1976, in 82.165 file. 466, PAA.

industry struggled with to produce oil from the Athabasca bitumen deposits, and also the inability of the Alberta government to impose strict environmental regulation on the financially precarious industry.

As early as 1968, the first year of operation, the report stated the GCOS plant suffered huge setbacks from boiler breakdowns and equipment failures that limited the availability of adequate levels of heat and power. GCOS was especially hampered by the challenge of stripping trees, muskeg, and soil from above the bitumen deposits, and extraction of the deposits under widely varying weather conditions, especially winter temperatures regularly dropping to -40° Celsius. Under such extreme cold temperatures, muskeg froze, and exposed bitumen deposits became rock hard. Such temperatures make steel brittle and greatly reduce its strength. Frigid temperatures rapidly destroyed extraction equipment and presented one of the most challenging production problems. The cold temperatures caused regular failures of steam and power plants, which resulted in regular unplanned shutdowns of refining units that caused significant damage to equipment.[51]

In 1972 and 1973 improved equipment performance and fewer shutdowns increased production. The plant produced between 786,000 and 1.8 million barrels per month, averaging near the designed approximate production capacity of 45,000 bbl./d.[52] In 1974 however, a turbo-generator failure caused a process unit to spew a solution of potassium carbonate into the air which settled on nearby power lines, causing a ground fault and shutting down the entire plant. The system failed several times before properly starting up

[51] Department of Energy and Natural Resources, government of Alberta, Notes Re. Great Canadian Oil Sands Submission of March 29, 1976 to the Alberta government," 21 October 1976, in 82.165 file. 466, PAA

[52] Great Canadian Oil Sands Limited, "Submission to the Honourable Don Getty, Minister of Energy and Natural Resources, Province of Alberta," 29 March 1976, in 82.165 file 466, PAA.

again. The stops and starts caused significant damage to the processing system, which caused equipment failures and further shut downs later in the year. Cold weather problems also caused the structural failure of the small bucketwheel extractor, and frozen lumps of bitumen damaged conveyor belts. 1975 was an extremely cold winter, with temperatures dropping to -56° Celsius. Extraction equipment regularly broke and froze on the solid overburden and frozen mine face, processing equipment failed regularly as instruments froze. The damage required a maintenance shutdown in April and May that was difficult to recover from. During the spring of that year massive rainfall flooded the mine site, turning it into a swamp that swallowed overburden stripping equipment and halted operations. The processing facilities experienced major problems including fires, corrosion, shutdowns, failures, and multiple electrical problems. GCOS described the plant as a "domino structure," a highly complex facility composed of "a chain of units that cannot be effectively uncoupled."[53] Failure in one area compromised all other aspects of the operation. Engineers had built storage capacity for diluted bitumen between the extraction plant and the process area to try to alleviate the processing consistency problems. However, they felt that the only way to properly fix the problem would be to duplicate each aspect of the facility, but that this would be unrealistically expensive.[54]

GCOS wrote that huge workforce turnovers compounded the problem. The isolation of the plant and extreme working conditions made it difficult for the operation to retain the highly skilled and trained personnel it required to operate and maintain the plant. GCOS also wrote that in 1963 when the decision was made to build the plant, the

[53] Great Canadian Oil Sands Limited, "Submission to the Honourable Don Getty, Minister of Energy and Natural Resources, Province of Alberta," 29 March 1976, in 82.165 file 466, PAA.
[54] Ibid.

synthetic oil industry looked promising. Through the late 1960s and early 1970s inflation had greatly increased costs despite rising oil prices. Meanwhile the federal government's price freezes and export taxes had created a condition where prices were controlled but costs were not, compromising the industry's ability to generate funds. The combination of such massive technical problems and a worsening economic environment was killing the project.

It also pressured the Alberta government to reconsider the increasingly stringent environmental regulations. The report stated that "when GCOS first commenced production in the late 1960s it met all the environmental requirements in the permit it received from the Alberta government. Since then the Environmental Standards, particularly those concerned with air emissions have become more stringent."[55] It wrote that their 1973 *Clean Air Act* Licence called for a major reduction in the emission of particulates from the GCOS powerhouse by 31 July 1979, and that it also required GCOS to submit to the Department of the Environment a proposal detailing the steps which the company planned "to implement to comply with a maximum calculated ground level sulphur dioxide concentration of 0.06 ppm with respect to emissions from the plant under all operating conditions." It claimed that they were having huge problems maintaining the reliability of their sulphur recovery unit, which had most recently cost them $600,000 in upgrades and repairs following failure in 1975. They claimed that it would cost them $13 million to build the best backup and enhancement units. They went on to claim that improved solutions to sludge disposal and tailings treatment would be even more expensive. GCOS also lamented the increasing costs of land surface conservation and

[55] Department of Energy and Natural Resources, government of Alberta, Notes Re. Great Canadian Oil Sands Submission of March 29, 1976 to the Alberta government," 21 October 1976, in 82.165 file. 466, PAA.

requirements for reclamation deposits. They pleaded the case that the costs and requirements were too much for a pioneer oil sands plant taking huge financial losses.

GCOS advocated expanding the plant from 45,000 to 65,000 bbl./d to make the plant more profitable by operating on a larger scale. GCOS sought more funding from Sun Oil or a bailout from the Alberta government, as well as reduced royalty rates, more relaxed environmental regulations, and lowered debt burdens. The report specifically highlighted the socio-economic consequences for Fort McMurray and the Alberta synthetic oil industry if the plant were to be shut down.[56] As GCOS moved through the application process, the Iranian Revolution caused a further price increase that greatly improved the economics of the oil sands industry. In response, Sun Oil took steps to merge with GCOS into what would become Suncor to take advantage of the opportunity to pay a sub-market value price for privately held GCOS shares by merging the company prior to the inevitable increase in share prices that would follow the appraisal of the imminent expansion. Sun announced the merger On 6 September 1978, in spite of the acrimony of small shareholders.[57] Alberta Environment officials maintained that the plant would be classified as a new plant and therefore subject to new environmental impact assessments and regulations. G.B. Mellon, Alberta Minister of Energy, Mines, and Resources wrote to Energy Minister Don Getty, stating that "it is rather late in the planning process for Environment to change its views on the requirements for sulphur emission controls."[58] In spite of a negative intervention from the Fort McKay First Nation at the ERCB hearing, expressing the environmental consequences of the first decade of

[56] Department of Energy and Natural Resources, government of Alberta, Notes Re. Great Canadian Oil Sands Submission of March 29, 1976 to the Alberta government," 21 October 1976, in 82.165 file. 466, PAA.
[57] Ron Nowell, "Shareholder tries to block merger," Calgary Herald, 20 December 1978, 82.165 file. 683, PAA.
[58] G.B. Mellon to Don Getty, 3 May 1978, in 82.165 file. 466, PAA.

the GCOS plant's existence, GCOS was granted Ministerial Approval to expand by Minister of Renewable Resources F.W. MacDougall on 8 March 1979.[59]

Environmental Research

The federal government and the government of Alberta created the Alberta Oil Sands Environmental Research Program (AOSERP) in early 1975. AOSERP was the first major research program designed to analyse the environmental impacts of the development of the oil sands industry. It was under joint control of Environment Canada and the Alberta Department of Environment and intended to run for ten years on a $40 million budget, formed by an agreement signed on 26 February 1975. AOSERP's mandate was to undertake environmental research relative to renewable resources in the Athabasca oil sands region and make information available to the two governments to minimize negative environmental impacts from oil sands development.[60] Though the purpose of AOSERP was to produce information to aid the establishment of environmental regulations for acceptable limits of damage, the program was confined to research only and did not "involve the management of renewable resources."[61]

AOSERP was a comprehensive program that in its five-year life span was funded with over $17 million by the federal and provincial governments.[62] The project produced

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[59] G.B. Mellon to Don Getty, 3 May 1978, in 82.165 file. 466, PAA.
[60] Government of Alberta, "Canada - Alberta Agreement for the Alberta Oil Sands Environmental Research Program 1975,1977," 5, from *Oil Sands Research and Information Network*, "Alberta Oil Sands Environmental Research Program (AOSERP) Report Collection" (Edmonton: University of Alberta Libraries Education and Research Archive, 2010) https://era.library.ualberta.ca/public/view/collection/uuid:0105d798-7e23-4232-8920-4f849fca38b7 (Accessed 5 October 2011).
[61] Government of Alberta, "Canada - Alberta Agreement for the Alberta Oil Sands Environmental Research Program 1975,1977," 3
[62] Stuart B. Smith ed., "Alberta Oil Sands Environmental Research Program interim report covering the period April 1975 to November 1978," (1979), 101. from Oil Sands Research and Information Network, "Alberta Oil Sands Environmental Research Program (AOSERP) Report Collection" (Edmonton:

over 200 reports on air systems, land systems, water systems and human systems. Dr Ron Wallace, the former director the AOSERP aquatic fauna research group wrote that considering the agreement was "signed during a period of heightened jurisdictional tensions between Alberta and Canada, the 1975 AOSERP program was unique in scope and degree."[63] The program received financial support and personnel from the federal and provincial government, from Fisheries and Oceans Canada, Environment Canada, representatives from Alberta agencies and university researchers.[64] AOSERP was managed by a series of committees chaired by two federal and six Alberta representatives, reported through an Alberta Program Manager and jointly to the Ministers of Alberta Environment and Environment Canada. Wallace writes that the program "received international attention for its unique, co-operative and integrated approach to regional baseline monitoring and environmental research."[65]

Before the agreement was signed, correspondence from within Environment Canada indicated concern that research priorities could be compromised by federal investments in the Syncrude project. A. S. Rosemarin from the Fisheries and Marine Service wrote to Dr. R. H. Bailey at the Lands Directorate in January expressing that the

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University of Alberta Libraries Education and Research Archive, 2010) https://era.library.ualberta.ca/public/view/collection/uuid:0105d798-7e23-4232-8920-4f849fca38b7 (Accessed 5 October 2011).

[63] Ron Wallace, "History and Governance As A Blueprint For Future federal-provincial Co-operation on Environmental Monitoring in the Alberta Oil Sands Region" (Alberta Water Portal, November, 2011) http://albertawater.com/index.php?option=com_content&view=article&id=801%3Aguest-columnist-ron-wallace&catid=45&Itemid=71 (accessed 14 November 2011, 8.

[64] Stuart B. Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report" (government of Alberta, November 1981), 8, from Oil Sands Research and Information Network, "Alberta Oil Sands Environmental Research Program (AOSERP) Report Collection" (Edmonton: University of Alberta Libraries Education and Research Archive, 2010) https://era.library.ualberta.ca/public/view/collection/uuid:0105d798-7e23-4232-8920-4f849fca38b7 Accessed 5 October 2011.

[65] Wallace, "History and Governance As A Blueprint For Future federal-provincial Co-operation on Environmental Monitoring in the Alberta Oil Sands Region," 8.

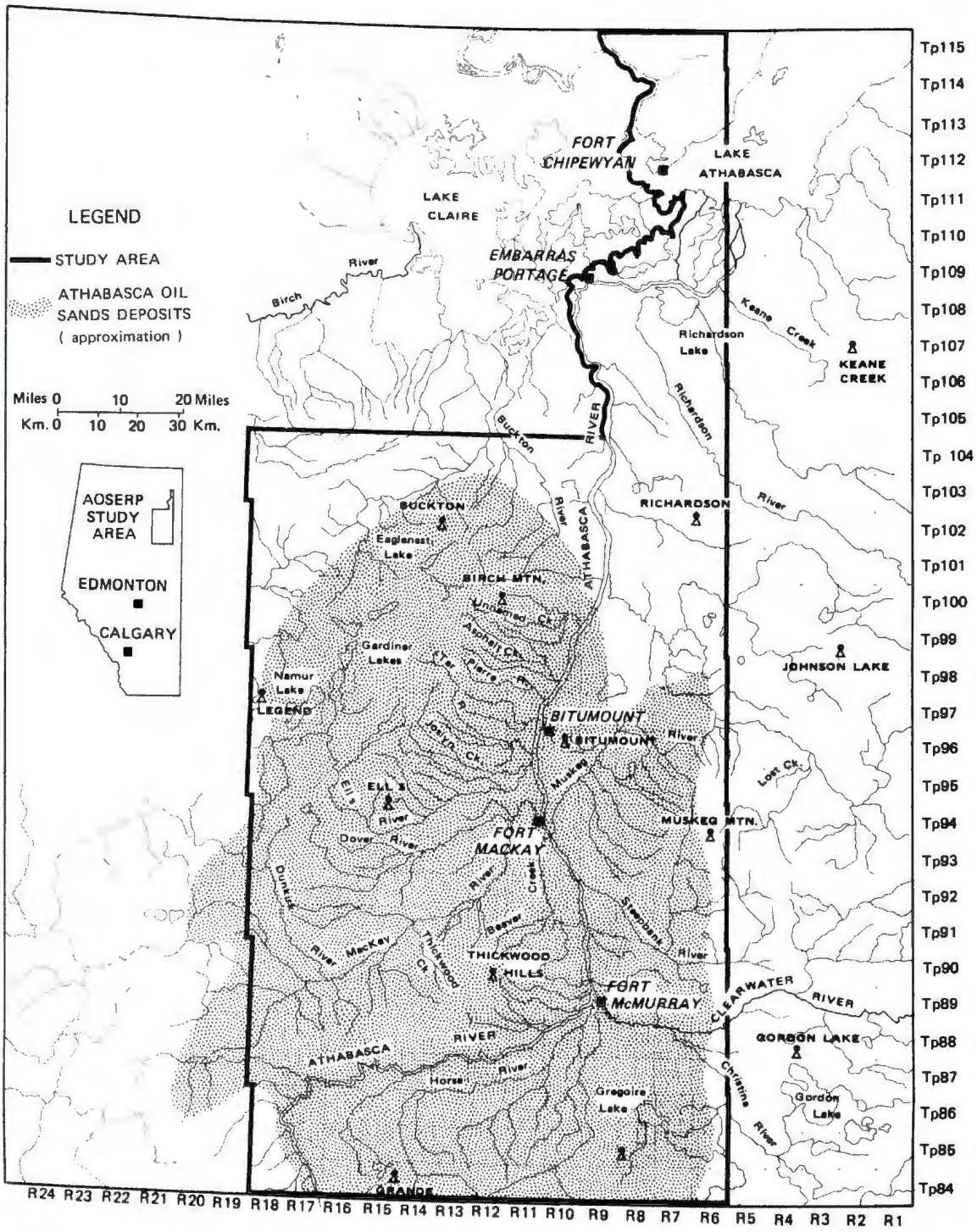

Figure 6: AOSERP Study Area, in Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report," 4. Used with permission.

research priorities had not been clarified, and that perceived inadequacies in the agreement "will loom even greater if federal funds become tied up in the tar sands development as may be the case in light of the present state of affairs with Syncrude. Such federal influence could certainly alter details in the agreement..."[66] Within Environment Canada, and more generally at the national level, involvement of the federal government in environmental research and regulation in Alberta was seen as a duty to Alberta during the 1970s. It was felt by the federal government that as Alberta's resources were being developed for the national need it was the responsibility of the federal government to invest in environmental protection so as to ensure that excess negative impacts did not accrue to the province.[67]

As AOSERP evolved, there were internal and external debates and power struggles centred on disagreements about the program's research priorities and general purpose. Industry and government largely saw development as inevitable, and sought research that would identify which impacts were acceptable and how mitigation measures could be taken, while researchers were more concerned with establishing baseline data and identifying major environmental impacts. The Alberta Environment Research Secretariat (AERS) saw the environment as one of four considerations in oil sands development political decision-making, the other three being technological, social and economic factors. The AERS felt that "from the hierarchical arrangement it can be seen that AOSERP should function in a manner consistent with the needs of management agencies, which in turn are responsible to government." They maintained that AOSERP

[66] A. S. Rosemarin, Fisheries and Marine Service to Dr. R. W. Bailey, Lands Directorate, 20 January 1975,
[67] E.F. Roots, Science Adivsor to J. B. Seaborn 25 July 1979 and J.B. Seaborn to John Fraser. 19 July 1979, in RG108 vol. 112 file 1165-36/H5 pt. 1 Committees, Boards, Councils, Commissions. Human Environment, LAC

research should be directed towards the "solution of practical social and technical environmental problems resulting from oil sands development and to provide scientific data for the use of government and industry so a better job can be done of protecting man, animals and plants and to aid in restoring the area to a biological productivity as good as or better than before mining commenced."[68] The Oil Sands Environmental Study Group sought to champion the position of industry in all aspects of research planning. The OSESG sought for AOSERP to be focused on consolidating environmental information, creating environmental inventories of the region, and identifying the absorptive capacity of the ecosystem of toxins, prior to major development. Bill Cary, chairman of the OSESG at the second AOSERP planning workshop stated that "there will be development; it will have an impact, we cannot say it won't. Therefore we have to measure somehow how much impact, or how much absorptive capacity the ecosystem has." He expressed dismay at the use of AOSERP money in funding projects that industry deemed not contributing to the solution of practical problems faced by industry:

> we are content with the re-orientation toward the solution of practical environmental problems which have occurred over the last year, but much progress remains to be done to answer the high expectations of AOSERP held by both the government and industry, who in the long final analysis will be the users of this work.[69]

Conflicts created tensions between AOSERP, industry and the Alberta and federal governments and caused significant problems with operation of the program.

Disagreements about the purpose of AOSERP, combined with Alberta government replacements of some research managers prompted a significant

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[68] Alberta Environment Research Secretariat, "Alberta Oil Sands Environmental Research Program: Proposed Purpose and Objectives," December 1975, in GR1981.203/4 box. 1 AOSERP, PAA.
[69] Bill Cary, OSESG chairman,
AOSERP Second Planning Workshop, 30 September 1976, in GR1981.203/4 box. 1 AOSERP, PAA.

restructuring of the program through 1976 and 1977. On a basic level, there were broad based disagreements between the politicians and bureaucrats who funded and controlled the program, and the scientists actually doing the research. At the 28 July 1976 Steering committee meeting W. Solodzuk stated that,

> Much of the problem lies within the organizational structure. The present structure does not clearly delineate lines of responsibility and accountability and many people, particularly project leaders, are finding they have two masters, one the Technical Research Committee, who designs the research and the other, Program Management, who is responsible for the activities. Without line accountability Technical Research Committee's plans do not always reflect the needs and responsibilities incumbent in the Alberta-Canada Agreement.[70]

Meanwhile, Dr Ron Wallace, director of the Aquatic Fauna Technical Research Group, who went on to form Dominion Ecological Consultants and a long career as a federal environmental scientist with the Environmental Protection Service, argued that there should be a separation from program management to preserve the autonomy of research, that program management should act more as a facilitator, and the Technical Research Committees (TRCs) "should have greater responsibility to encourage research rather than emphasize control of research."[71] At the third Program Operations Group Meeting, a note-taker recorded that Dr Wallace

> voiced displeasure with the notes. He said the notes gave him the impression that Air Quality and Aquatic Fauna were not cooperating. He felt the spirit of the meeting was missed. He also questioned the need for notes as he felt that they were there to talk science and not become bureaucrats.[72]

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[70] W. Solodzuk, AOSERP Joint Steering Committee Meeting, 28 July 1976, in RG39 box 76 file 6638-2-1-2-2 pt.1 AOSERP, LAC.
[71] Dr. Ron Wallace, AOSERP Joint Steering Committee Meeting, 17 August 1976, in RG39 box 76 file 6638-2-1-2-2 pt.1 AOSERP, LAC.
[72] Program Operations Group Meeting #2, November 1976, in 81.203 box.1 file.6, PAA.

The planning committee found it highly problematic that there were no broad based reports that could be used by industry and government in policy and technology planning. It stated that "the narrow, discipline-specific projects that characterize the present Program will not provide the answers to questions on broad environmental problems," and that a systems based approach to environmental research would be more useful.[73] The planning committee felt also that it was problematic that AOSERP did not consider any proposed oil sands industry development or reclamation scenarios environmentally sound or acceptable.

The result of these meetings was a major reorganization of AOSERP to a systems based approach to environmental research that necessitated the negotiation and signing of a new agreement in 1977.[74] The senior advisory and liaison committee was eliminated and replaced with a senior advisory board appointed by the Alberta minister and deputy minister of environment to provide "policy level advice to the Steering Committee," a program director responsible to the steering committee, a new accountability of the TRCs to the program director, and a changed financial agreement whereby the program would be funded fully by Alberta, and reimbursed by the federal government.[75] These changes drastically reduced the independence and autonomy of AOSERP as the new structure allowed for significant interference from research managers. R. P. Angle, a meteorologist with the Air Quality Control Branch wrote to J. C. Jack, head of the Air Quality Control Branch, expressing concern about the role of the research manager following the AOSERP reorganization.

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[73] Program Operations Group Meeting #2, November 1976, in 81.203 box.1 file.6, PAA.
[74] Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report."
[75] AOSERP Steering Committee to All AOSERP Technical Research Committee Chairmen, 18 January 1977, in GR1997.0370 AOSERP 1 2005-1-2-55R, LAC.

> To a large extent I believe the members all felt intimidated by the Research Manager, in whom all power was vested. Proposals were no longer suggested, referred to subcommittee and then acted upon. Instead, committee members were asked only to criticize already written terms of reference.

Angle continued that coupled with the new AOSERP Operational Policy and Research Goals, the new structure was a "major shift towards meeting objectives set by Alberta rather than those set by the federal government."[76] He wrote that his new Research Manager was not actually a scientist, and lacked the scientific literacy to make sound scientific judgments and manage research projects. Research was reined in following the re-organization to meet more closely the desires of the Alberta government and the oil sands industry. The financial involvement of the Alberta government in the oil sands industry correlated with the Alberta government taking control of and repurposing of the originally independent AOSERP program to orient research towards provincial and industry dictated objectives.

On 13 September 1978, Len Marchand, federal Minister of Environment, wrote to D. J. Russell, Alberta Minister of Environment, announcing the withdrawal of federal funding from AOSERP, effective 1 April 1979.[77] Marchand primarily cited massive budget cuts as the main reason for the withdrawal, but also noted the Alberta dominance of the program that "the future work under the Program would have shifted gradually towards studies of provincial interest with somewhat less emphasis on matters of federal interest." Attached to Russell's letter were comments from R.G. Skinner who indicated that the federal government was somewhat fed up with the Alberta government's handling of the program:

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[76] R.P. Angle, Meteorologist, Air Quality Control Branch, to J.C. Jack, Head Air Quality Control Branch, 22 September 1977, in GR1997.0370 AOSERP 1 2005-1-2-55R, LAC.
[77] Len Marchand to D. J. Russell, 13 September 1978, in R1526 vol. 267 file no.5 file.243-14, LAC.

> AOSERP has been plagued with difficulties from its inception. Beset with federal-provincial wrangling over who would study what, the tendency to appoint heads of projects based on government affiliation rather than expertise, low morale, high staff turnover and general misdirection would have or should have raised serious doubts sooner or later as to AOSERP's usefulness.[78]

He also pointed out that notwithstanding the collapse of AOSERP, "the prospect of continued and expanded development of the tar sands will continue to raise concerns about water supply and quality, air emissions and land reclamation." Russell's response to the AOSERP withdrawal indicates that the Alberta government saw the action as another in a long chain of federal disservices to Alberta. He wrote back to Marchand on 3 October,

> I must state that our reaction to this yet another unilateral federal 'decision' is one of extreme displeasure. It seems to be the current style of the federal government and, insofar as Alberta is concerned, it is not conducive to harmonious federal-provincial relations. Your initiative is an absolute contradiction of the spirit of the Prime Minister's August 18th telex to Premier Lougheed wherein it was stated '...we will undertake to fully discuss with you before deciding to make changes to federal-provincial contractual or legislative arrangements presently in effect. The federal government is most anxious not to amend unilaterally existing contractual or legal commitments.'[79]

Russell emphasized that the oil sands industry was a joint project between the federal and provincial governments to bolster national energy security, and that regardless of jurisdiction the unknown environmental impacts of oil sands mines on Alberta should be matters of national importance. The provincial government funded AOSERP until the end of 1980, when it was formally shut down.

Correspondence from within Environment Canada following the withdrawal from AOSERP gives insight into the perspectives and concerns of the federal government on

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[78] R. G. Skinner, "Comments on termination of AOSERP" attached to Len Marchand to D. J. Russell, 13 September 1978, in R1526 vol. 267 file no.5 file.243-14, LAC.
[79] D. J. Russell to Len Marchand, 3 October 1978, in R1526 vol. 267 file no.5 file.243-14, LAC.

oil sands industry development and environmental management. E. F. Roots, an Environment Canada Science advisor wrote to Deputy Minister J. B. Seaborn in July 1979,

> Programs like AOSERP and its provincial progeny are defining the problems, and serve to indicate some constraints and point to some areas of solution, but also serve to indicate how little real attention is being given to environmental matters in the energy policy and economic considerations of tar sands development... Both provincial and federal environmental programs appear to be in danger of being left behind in tar sands decisions. The decisions are almost exclusively weighed in the areas of conventional economics and federal/provincial influence.[80]

This memo pinpoints the dominance of economic perspectives of government assessments of resource extraction and environmental protection. In oil sands projects, the value of environmental protection was considered external to traditional cost-benefit analysis. In 1979, R. W. Drurie, a senior policy advisor in the federal Department of Energy, Mines and Resources, wrote a memo to file following a meeting with environmental coordinator Bob Skinner, petroleum resources advisor James Hea and University of Alberta chemistry professor Doug Montgomery:

> The environmental implications of an accelerated and enlarged tar sands program are clearly immense if that development is to be pushed forward on a scale commensurate with a policy to achieve petroleum self-sufficiency for Canada by 1990... In the first tar sand projects, environmental standards were set with the assumption that development experience would lead to improved technology for control of emissions such as sulphur dioxide and fines in wastewater. However, the current thrust to development is basically a conservative one in which only proven and applied technology is used for tar extraction and for pollution control. The anticipated advances have not been achieved.... The expenditures contemplated for tar sands development are measured in tens of billions of dollars. The development research program is some $100 million. Yet

[80] E.F. Roots, to J. B. Seaborn 25 July 1979, in RG 108 vol. 112 file 1165-36/H5 pt. 1 Committees, Boards, Councils, Commissions. Human Environment - Athabaska Tar Sands - Syncrude AOSERP, LAC.

> environmental research projects requiring some few thousands dollars can not get funded...[81]

The collapse of AOSERP reduced the production of environmental knowledge that could have been applied to the structuring of environmental regulation and the enforcement of the *Clean Air* and *Clean Water Acts.* Government-organized environmental research was limited while development priorities increased and federal-provincial tensions grew with increasing hostility. Following the collapse of the AOSERP agreement, the program did not fully disappear, but was amalgamated with the Research Secretariat to form the Alberta Environment Research Management Division.[82] The Research Management Division was better than nothing, but environmental research on the oil sands industry generally languished after AOSERP.

The final 1981 report, authored by Stuart Smith, was only submitted to Alberta Environment. Smith's report reveals significant anger at the program's death and looks towards a dark future for the environmental monitoring of the oil sands industry. The report held that the efforts of AOSERP were "only the first step toward any in-depth assessment of ecosystems and social impacts..." and that in order "to assess with any degree of exactitude what long-term impacts of oil sands development might be, extensive research will be required to develop a predictive capability which does not now exist."[83] The program was understood to have achieved the important goal of establishing the solid baseline data that was so desperately needed. Smith wrote that

> Most of the baseline research described in the AOSERP Interim Report has been carried out in a natural environment that appears so far not to

[81] Memo to file, R. W. Drurie, Bob Skinner, James Hea, Doug Montgomery, in RG 108 vol. 112 file 1165-36/H5 pt. 1 Committees, Boards, Councils, Commissions. Human Environment - Athabaska Tar Sands - Syncrude AOSERP, LAC.
[82] "Notice of Amalgamation," Research Management Division, Alberta Environment, 14 May 1980, in RG39 box 76 file 6638-2-1-2-2 pt.1 AOSERP, LAC.
[83] Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report," 120.

> have suffered any general debilitation from oil sand activities. Data gathered from such an environment are therefore extremely valuable as benchmark information against which future developmental impacts can be measured.[84]

He maintained that "research concerning impacts of air pollution on soils and vegetation has not yet demonstrated that damage has occurred from atmospheric pollutants," and that "studies of water chemistry and aquatic biota in the Athabasca River fail to reveal significant impacts downstream of Fort McMurray and the two presently operating oil sands plants, either from materials emanating from the industrial operations or from domestic sewage and municipal drainage from Fort McMurray."[85] The conclusions of AOSERP, the Alberta Oil Sands Industry Environmental Association (AOSIEA), and from Syncrude, Suncor, Alsands and other corporate interests, stated that the oil sands industry was causing negligible environmental damage in the region.[86] However, Smith wrote that there had been "a startling transformation of the region during the period from 1960 to 1980, with Fort McMurray increasing its population by about 10 times," and that the results of AOSERP were not reliable:

> the deficiencies involved with lack of interdisciplinary connections and lack of clear research direction for AOSERP may have prejudiced the capacity for the program to detect effects of emissions and effluents on terrestrial and aquatic ecosystems, respectively... Neither impacts nor predictions for the future are possible from the results of AOSERP investigations.[87]

Many studies were incomplete, and did not cover a wide enough area or period of time and therefore could not be looked to for an accurate picture of environmental conditions

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[84] Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report," 26.
[85] Ibid., 27.
[86] The Fort McKay Biophysical Impact Assessment was commissioned by the ERCB, and prepared for the community under the direction of Dr. Ron Wallace from Dominion Environmental Consultants Ltd. McKay Community Fort, "A Review of the Biophysical Impact Assessment and Reclamation Plan For New Mining Areas In Support of Approved New Facilities at the Syncrude Canada Ltd. Mildred Lake Plant," (Ft. McKay, Alberta1986), 7.
[87] Smith, "Alberta Oil Sands Environmental Research Program 1975-1980: Summary Report," 120.

in the Athabasca oil sands region. Although environmental research continued under the Alberta Environment Research Secretariat, the collapse of AOSERP marked the end of collaborative, interjurisdictional environmental research in the oil sands region.

Other environmental and social scientific research done by Alberta Environment, independent researchers, and environmental consulting companies between the mid-1970s and mid-1980s asserted that major environmental degradation was taking place.[88] The development of the oil sands industry had direct adverse impacts on proximate ecosystems, caused by the physical construction and operation of oil sands plants and associated infrastructure, the expansion of the town of Fort McMurray, water pollution associated with tailings ponds, effluent seepage and oil spills, and atmospheric emissions, most prominently sulphur dioxide emissions from the upgrading process. The Athabasca River valley was a rich ecosystem that sustained large populations of moose, caribou, birds and fur bearing mammals. By strip-mining thousands of acres of forests and creating huge tailings ponds, the direct impact of the oil sands plants destroyed vast areas of wildlife habitat. By the 1980s, the Fort McKay community reported that they were seeing far fewer birds, squirrels, muskrats and moose.[89] The community also reported that the influx of people to the region was compounding pressures on wildlife. They noted a huge increase in waste dumping and garbage by newcomers who also brought an increase in recreational hunting, which compounded pressures on moose populations.[90]

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[88] Graeme Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," (Brentwood Bay, B.C.: Bethell Management Ltd., May 1985). Roger Justus and Joanne Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," (Vancouver: Justus-Simonetta Development Consultants Limited, December 1979). and, Fort McKay Indian Band, "From Where We Stand," (Fort McMurray, Alberta: Fort McKay Indian Band, 1983).

[89] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 23.

[90] Ibid., 24.

The development of the oil sands industry had widespread negative impacts on water that correlate between scientific research and community observations. By 1977 two major studies had assessed the GCOS tailings pond. Designed in 1964 to be temporary storage on Tar Island pending the availability of an inland mined out area for a permanent site, the GCOS tailings dyke was initially twelve metres tall, constructed of compacted earth fill.[91] Because of unanticipated processing difficulties, more tailings storage was required than initially anticipated, and by 1974 the dyke was over sixty-seven metres tall and more than three and a half kilometres long. By 1976 effluent seepage from the tailings dyke was between 1.5 and 1.6 million litres per day.[92] However, this seepage was thought to account for only 55-70% of total seepage because of unknown quantities of groundwater contamination.[93]

One of the most erroneous yet widely believed arguments made by those who deny the environmental impacts of the oil sands industry is that the industry cannot be blamed for water pollution because bitumen naturally leaches into the Athabasca River on hot days.[94] However, recent research by Kurek et al., has demonstrated that oil sands activities have resulted in increased levels of PAHs in surrounding lakes from atmospheric deposition, not from naturally leached bitumen.[95] Furthermore, Alberta Department of the Environment scientist W. C. MacKay conducted research in the mid-1970s which revealed that the organic carbon fraction of dyke drainage water was more

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[91] W. Solodzuk et al., "Report on Great Canadian Oil Sands Tar Island Tailings Dyke," (Design Review Panel, Alberta Environment, February 1977), 1.
[92] P. H. Bouthillier, "A Review of the GCOS Dyke Discharge Water," in *Great Canadian Oil Sands Dyke Discharge Water* (Edmonton, Alberta: Alberta Department of the Environment, August 1977), 1.
[93] D. N. Gallup, "Impact Assessment of Discharge," in *Great Canadian Oil Sands Dyke Discharge Water* (Edmonton, Alberta: Alberta Department of the Environment, August 1977).
[94] "Alberta's Oil Sands: Opportunity. Balance." Government of Alberta, 2008.
[95] Kurek et al., "Legacy of a Half Century of Athabasca Oil Sands Development Recorded by Lake Ecosystems."

toxic in composition than the carbon compounds which naturally leached from exposed bitumen deposits.[96] Samples of tailings pond water in 1976 revealed significant concentrations of ammonia and heavy metals including, copper, nickel, chromium and zinc.[97] Bioassay testing of the toxicity of tailings pond water conducted in 1974 found the heavy metal content to be lethal to rainbow trout.[98] Dilution of effluent flows one mile downstream of the dyke were 400 times in winter and 1200 times in summer.[99]

Figure 10: Unknown Photographer, "Aerial View of Great Canadian Oil Sands Ltd. Tar Island Tailings Dyke," (July 1975), in W. Solodzuk, N. R. Morgenstern, N. L. Iverson, E. J. Klohn, M. A. J. Matich, B. D. Prasad, I. H. Anderson "Report on Great Canadian Oil Sands Tar Island Tailings Dyke," Design Review Panel, Alberta Environment, February 1977. Used with permission.

While such dilution reduced the toxicity of contaminants to a non-lethal level, Mackay maintained that sub-lethal concentrations of tailings water toxicants would impair various

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[96] W. C. Mackay, "Toxicity of GCOS Tailings Pond Dyke Discharge," in *Great Canadian Oil Sands Dyke Discharge Water* (Edmonton, Alberta: Alberta Department of the Environment, August 1977).
[97] Ibid.
[98] S. E. Hrudey, "Characterization of wastewaters from the Great Canadian Oil Sands bitumen extraction and upgrading plant," (Ottawa, Canada: Water Pollution Control Section, Envrionmental Protection Service, Northwest Region, Environment Canada, 1975).
[99] Gallup, "Impact Assessment of Discharge."

body functions and cause significant health problems in fish.[100] D. N. Gallup asserted that the river diluted effluents to a non-lethal level, but research did not exist that could accurately assess the long term health implications of the chemical and organic contaminants in the Athabasca River for fish and humans.[101] Effluent seepage from the GCOS tailings dyke was not regulated by the Alberta government. The company's 1973 Clean Water Act licence regulated the requirements for effluents entering the tailings ponds but did not cover seepage rates or quality.[102] However, it is not clear the extent to which improvements tailings treatment and containment has ameliorated the issue of watershed pollution from groundwater contamination and dyke seepage.

The Athabasca River was also contaminated by biological pathogens from sewage that was dumped into the Athabasca River by the rapidly expanding town of Fort McMurray. By the early 1970s Fort McKay reported that drinking water from the Athabasca River induced nausea and vomiting and illnesses.[103] Between 1967 and 1975 the Alberta department of health warned the people of Fort McKay to stop drinking water from the river.[104] Two water storage tanks were installed at either end of the town. During the winter, the tanks had to be constantly heated by propane burners to prevent them from freezing.[105] By 1980, residents of Fort McKay reported that they could no longer even wash clothes with river water because it would cause them to stink and induce skin irritation and rashes. The community reported that pike and pickerel caught from the Athabasca River tasted bad and induced vomiting. By the early 1980s dead fish

[100] Mackay, "Toxicity of GCOS Tailings Pond Dyke Discharge."
[101] Gallup, "Impact Assessment of Discharge."
[102] GCOS CWA Licence No. 73-WL-041 (1973) in Bouthillier, "A Review of the GCOS Dyke Discharge Water."
[103] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 16.
[104] Ibid., 38.
[105] Ibid., 39.

were regularly seen floating in the Athabasca River and fish from the Muskeg River began to taste like oil and were subsequently abandoned as a food source by the community.[106] By 1985 an environmental impact assessment study of Fort McKay commissioned by the ERCB asserted that everyone in the community relied on the river, ice, snow and rain for water, but that all of these sources were contaminated. The community reported that rainwater had developed a "yellow scum" when collected and allowed to settle.[107]

Oil sands activities produced atmospheric emissions that bore deleterious consequences for surrounding ecosystems. A 1986 environmental impact assessment commissioned by the Fort McKay community stated, "there has been a definite and statistically significant deterioration in the long-term air quality of the region."[108] The report argued that the atmospheric concentration of sulphur dioxide, nitrogen dioxide and hydrogen sulphide permitted by the Alberta Air Quality Objectives (AQOs) under the *Clean Air Act* was significantly greater than the global atmospheric background concentration of those compounds. The report argued that government emphasis on compliance with the AQOs of the period had no ecological relevance, as meeting negotiable AQOs wrongly implied that environmental quality would be maintained in the long term, despite that no research data existed to support such a result.[109] The particulate emissions of fly ash (small dark flecks of ash produced from the burning of coke) from the Syncrude and Suncor plants increased the alkalinity and trace element and metal

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[106] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 16.
[107] Ibid.,17.
[108] Fort McKay Community, "An Issues Assessment for Concerns Regarding Ongoing Oil Sands Developments and the Community of Fort McKay," (Fort McKay, Alberta: Fort McKay Indian Band, 1986), 16.
[109] Ibid., 13.

content of the snowpack in the oil sands region, and can be correlated with the snowpack observations of the Fort McKay community.[110]

An environmental impact assessment report commissioned by Fort McKay cites research which indicates that the alkalinity in snow resulted from calcium and magnesium oxides.[111] Particulate emissions from the Syncrude stack were 3060 kilograms per day. Analysis of the particulate emissions revealed twenty-six trace elements and metals emitted at seventy kilograms per day.[112] Of the trace element emissions ninety-five per cent consisted of sodium, vanadium, magnesium, titanium, and manganese. Most toxic of these trace elements was vanadium, a transition metal emitted at three kilograms per day. Vanadium inhalation has adverse effects on the human respiratory system and repeated exposure can cause permanent health problems and death. Oil sands operations also emitted significant amounts of hydrocarbon particulates that could explain the presence of oily residue in water melted from snow in Fort McKay. The particulate emissions from the oil sands operations had potential for significant alteration of the mineral nutrient cycle in the oil sands region, and negative long-term environmental impacts on terrestrial environments.

Fort McKay residents associated atmospheric emissions from oil sands operations with a decline in the health of regional vegetation.[113] They reported that the tops of birch

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[110] Fort McKay Community, "An Issues Assessment for Concerns Regarding Ongoing Oil Sands Developments and the Community of Fort McKay," (Fort McKay, Alberta: Fort McKay Indian Band, 1986), 18.

[111] L. A. Barrie, "The fate of particulate emissions from an isolated power plant in the Oil Sands area of Western Canada," *Annals of the New York Academy of Sciences* 338(1980), in Fort McKay Community, "An Issues Assessment for Concerns Regarding Ongoing Oil Sands Developments and the Community of Fort McKay," 18.

[112] Syncrude, "Biophysical Impact Assessment for the New Facilities at the Syncrude Canada Ltd. Mildred Lake Plant," (Calgary: Syncrude Canada Ltd., 1984). in ibid.

[113] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta."

trees were dying, and that those that were still alive had yellowing leaves and were not healthy. All trees had generally declined in health and produced less foliage. They noted that jack-pine needles were drying and falling off and that all coniferous trees were producing fewer cones and nuts. Soon after the GCOS plant began operations they observed that berries had decreased in abundance.[114] Although AOSERP, industry and others asserted that the establishment of oil sands industry was not damaging to the environment of the broader region, significant research and community observation suggest that the industry caused extensive impacts that increased with the scale of production.

Figure 7: Unknown Photographer, The 600-foot Syncrude, Alberta (Winter 1976), Imperial Oil Archives, IP 65, GA. Used with permission.

[114] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 27.

Conclusion

The 1970s were formative years for environmental policy and management at the federal and provincial levels. Provincial and federal government environmental concerns about the oil sands industry transformed from a focus on wildlife conservation in the 1950s and 60s, to the writing of laws oriented towards pollution prevention such as the *Clean Air* and *Clean Water Acts*, the formation of the ECA, and the creation of the Departments of Environment. Careful environmental management was a key priority of Lougheed's rational planning approach to the oil sands industry in 1971 and 1972. The OPEC price increases and Alberta and Canada's investment in Syncrude created a development imperative that challenged Alberta's intention to closely control the growth of the industry, and produced a potential conflict of interest position that may have compromised effective regulation of the resource. Developed under such conditions, environmental regulators and researchers were never given the authority or autonomy to be effective. Though Alberta set precedent as the first Canadian province to develop serious environmental policy, further investment in and empowerment of environmental regulation trailed behind the rapid development of the oil sands industry. By the late 1970s and early 1980s significant research demonstrated that environmental damage was taking place. With the ending of the AOSERP program and the failure of the Alsands project, the maintenance of government environmental research agendas declined significantly in the 1980s.

CHAPTER THREE

Resource Colonialism and Indigenous Responses to Oil Sands Development

The Athabasca oil sands region is home to five major First Nations and Métis communities, the First Nations of which form the Athabasca Tribal Council: Fort McMurray, Fort McKay, Fort Chipewyan, Janvier, and Cold Lake. Each of these communities is home to both Treaty and non-Treaty signatories and Métis. All First Nations governments in the region are signatories of Treaty 8.[1] Traffic to the region grew with the establishment of Fort McMurray in 1870 and the introduction of steamboats to the Saskatchewan River in 1875.[2] The completion of the CPR line to Calgary in 1883 ended use of the Churchill-Clearwater River access route. When the HBC cut a road from Edmonton to Athabasca Landing and launched the *S.S. Grahame* at Fort Chipewyan, Fort McMurray became the southern terminus for northern transportation in the Mackenzie River Basin. The construction of this new transport network opened the region to industrial development staged from Edmonton and Calgary. The completion of the Alberta and Great Waterways Railway to Waterways in 1925 boosted the relationship between southern Alberta and the oil sands hinterland.[3] For Aboriginal peoples, the influx of population and trade following the industrialization of transport with railroad and steamship imposed a regime of settlement and development on the fur trade society.[4] Between the 1890s and the 1950s Aboriginal populations were more widely spread,

[1] McCormack, *Fort Chipewyan and the shaping of Canadian history, 1788-1920s: "We like to be free in this country"*, 20.
[2] J.M. Parker, " Athabasca Oil Sands Historical Research Project," *Alberta Oil Sands Environmental Research Program* (1979), xiii.
[3] Ibid., xiv.
[4] Ibid., xiv.

living as hunters and trappers, centred around trading posts. The influx of southern missionaries, trade, and institutions was accompanied by the establishment of residential schools, which became mandatory in the 1950s and 60s. The accessibility of residential schools, family allowances, and other forms of social assistance led to a decline in bush camps by the 1960s. The most substantial permanent settlements became Janvier, Anzac, Fort McMurray, Fort McKay, and Fort Chipewyan. Though permanent communities became more populous, they remained dependent on hunting, gathering, trapping and fishing for both income and subsistence.[5]

The construction of the oil sands industry in the 1960s and 1970s was the physical manifestation of the region's colonization by southern Canada that had begun with the industrialization of Fort McMurray in the 1930s and World War II, the construction of the Bennett Dam, the commencement of uranium mining at Uranium City, and the establishment of commercial fisheries on Lake Athabasca. The policies that informed the first commercial development phase of the oil sands industry only marginally addressed the existence of the First Nations and Métis communities who lived in the region. Industrial development imposed significant adverse environmental, social and economic impacts on proximate Indigenous communities. By the mid-late 1970s the impacts of the industry, compounded with other forces including declining fur prices, residential schooling, and an increased presence of government bureaucracy, undermined the contact-traditional economies of Indigenous communities and forced residents to seek employment in the industry from which they had largely been excluded. Indigenous

[5] McCormack, *Fort Chipewyan and the shaping of Canadian history, 1788-1920s: "We like to be free in this country"*: 20.

peoples in the oil sands region were unable to halt or mitigate environmental destruction, and by the 1980s fought aggressively for environmental protection and employment.

Resource degradation and exclusion

The effect of environmental impacts from oil sands activities on Indigenous communities during this period is best accounted for by the Justus-Simonetta Development Consultants Ltd "Major Resource Impact Evaluation," which was prepared in 1979 for the Cold Lake Band and the Indian and Inuit Affairs Program by Roger Justus and Joanne Simonetta. The stance of Esso and the ERCB on Cold Lake was based on the Board's public benefit mentality, that regional and national needs and benefits of the industry outweighed any negative impacts within the project area. The report was commissioned to investigate the impacts of the Athabasca oil sands industry and to draft a strategy for Cold Lake to deal with the pending Esso in-situ oil sands project. The study reflected perceptions of environmental and social change of a large number of Indigenous peoples in the oil sands region who relied on natural resources for subsistence. Justus and Simonetta used a questionnaire and interview methodology to produce data, completing forty-six household interviews in Fort McKay, Fort McMurray and Fort Chipewyan, which reflected the views of approximately 300 people. They interviewed thirty-four households in Fort McKay, six in Fort McMurray, and six at Fort Chipewyan.[6]

Justus and Simonetta cited eight major negative impacts that followed the establishment of the oil sands industry: deterioration of social fabric, evidenced by increased alcohol abuse, violence, less security, increased family breakdown, loss of kin

[6] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 21.

support and a lack of solidarity; lack of improvement in living standards in terms of infrastructure, health or transportation; degradation of the region's physical environment and natural resource base; deterioration of economic stability with loss of access to, and reduced yields from, hunting, trapping, fishing and gathering, and resulting increased debt loads; minimal participation and work opportunities in the oil sands industry; and overall decline in the ability of Indigenous communities to manage themselves and provide for the basic and essential needs of residents.[7] The survey data revealed that 97.7% of the total sample felt that the oil sands plants had had some impact on the wildlife and natural resources of the area. In Fort McKay, 100% of respondents stated that the Suncor and Syncrude plants had affected wildlife. Respondents in Fort Chipewyan felt that the main environmental impact had been the pollution of Lake Athabasca, though they also reported a decline in the numbers of migratory birds. Thirty-eight per cent of respondents reported that fish from the Athabasca River and Lake Athabasca were unhealthy, smelled like oil and were inedible. Pinecone growth was also reported to have become poor and bushes and trees were unhealthy, due to emissions. Moose were scarcer, deer were gone, and tailings ponds were continually killings birds, including 400 that died in 1978 after landing on the Syncrude tailings pond. In addition to these losses was the pressure on wildlife from increasing numbers of southern hunters.[8]

The most significant environmental concern recorded by Justus and Simonetta was the quality of drinking water from Lake Gregoire, Lake Athabasca and the Athabasca River. Water was polluted by oil sands operations but also by sewage discharge from Fort McMurray. Of total respondents, 97.8% agreed that water quality had significantly

[7] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 24.
[8] Ibid., 31.

deteriorated since the establishment of the oil sands industry. Fort Chipewyan residents reported having been told by a nurse to boil water before drinking it. Gregoire Lake residents told Justus and Simonetta that the lake was extremely polluted. Justus and Simonetta concluded that:

> Overall, the Indian [sic] communities in the Athabasca tar sands regions have become or are destined to become the net losers in the resource development of the region. Attempts to identify, avoid, ameliorate or mitigate significant socio-economic and environmental impacts of these major resource developments have been, from the communities' points of view, uneven and unsuccessful.[9]

Justus and Simonetta's consultation of Indigenous communities in the oil sands region produced a narrative that differed greatly from the government and Industry position that no significant environmental damage had occurred.

The issues plaguing the community were recorded in depth in the 1985 interview based report by Graeme Bethell. It primarily highlighted the direct physical impact of human and mechanical destruction of wildlife habitat. The Athabasca River valley was a rich ecosystem that sustained large populations of moose, caribou, birds and fur bearing mammals. By strip mining thousands of acres of forests and creating huge tailings ponds, the impact of the oil sands plants destroyed significant wildlife habitat. The community also reported that the influx of people to the region was compounding pressures on wildlife. Bethell reported a decline in lynx along with squirrels and other small game, and a subsequent decline in wolves and other predators. The community described a broad scale decline in the abundance and health of wild animals. The Bethell report confirmed

[9] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 129.

that recreational hunters were shooting more moose than the population could sustain, further compromising Fort McKay's subsistence resource base.[10]

By 1985 the Fort McKay community reported that they were seeing far fewer birds and fewer species, especially in summer months.[11] They specifically noted that the thousands of mud hens had all but disappeared from McLean Lake and Sellar Lakes. Mud hen eggs were a food source for the community and the loss was significant. Fort McKay hunters remembered being able to shoot 50 or more grouse a day before the GCOS plant became a significant destructive force in the area. After the start up of the plant it became hard for hunters to shoot more than three or four in a day. The community linked a parallel decline in squirrels to the decline in coniferous cones. Bethell reported that hunters had been able to shoot 100 squirrels in a day, but by the 1980s a good hunter could only get ten. Squirrels were important both as a food and fur source. Bethell reported that hunters would shoot around 2200 squirrels between 15 November and 20 December and sell the skins. This practice had become all but impossible, and the meat of the remaining squirrels was poor and the fur worthless. They noted that muskrats were disappearing from the McKay River, and also became an unreliable resource for Fort McKay.[12]

The community noted significant declines in water quality and in the abundance and health of wild animals after the oil sands plants began production. Bears were not as healthy and their meat did not taste as good. They suggested that this was because pollutants had contaminated buds, shoots and the red willow berries that grew beside

[10] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 25.
[11] Ibid., 23.
[12] Ibid., 24.

Athabasca river. The community also maintained that moose became much less abundant after the mid-late 1970s, and that they had stopped eating red willow shoots.[13] The Bethell Report did not identify specific contaminants but it did note a decline in squirrels and other small game, and a subsequent decline in lynx, wolves and other predators. Water pollution had a significant impact on fish, a major food source for communities. Prior to the pollution of the Athabasca River, each Fort McKay family would catch over 2000 fish each fall to dry and store for winter months. Fish were an important subsistence resource and the autumn fish catch was an important cultural event. Both were eliminated by the oil sands industry. Dead fish were regularly seen floating in the river by the early 1980s. Fish were no longer used for bait in trapping, as animals would not eat them. By the early 1980s fish from the Muskeg River began to taste like oil and were subsequently abandoned as a food source by the community.[14]

The Bethell report noted that residents smelled odours from the oil sands plants constantly since the opening of GCOS in 1967 that were more prevalent in cold weather. They reported eye irritation and irregular exhaustion, that guns and metals rusted faster out of doors, that an oily film, smell, taste and black particles appeared in water melted from snow, that clothes left to dry outside would adopt an oily sulphur like smell, and that rain water would stain buckets and utensils black.[15] The Fort McKay community associated atmospheric emissions from oil sands operations with a decline in the health of regional vegetation, though they did not specify any pollutants by name.[16] They noted that jack-pine needles were drying and falling off and that all coniferous trees were

[13] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 25.
[14] Ibid., 16.
[15] Ibid., 18.
[16] Ibid., 17.

producing fewer cones and nuts, a significant food supplement for Fort McKay. Soon after the GCOS plant began operations they observed that berries had decreased in abundance. Saskatoon and blueberries had almost completely disappeared and cranberries had declined significantly. The community mentioned that they used to be able to pick 300-400 pounds of cranberries in a season, but now could never get more than thirty. Edible plants, herbs and medicinal plants became more scarce, and what could be collected was less trusted by the community.[17]

The dire circumstances described in the Bethell report prompted the ERCB commission the 1986 Fort McKay report to consolidate information on the environmental impacts of oil sands activities. The report, discussed in depth in chapter two, blended the observations and indigenous knowledge of Fort McKay residents with available scientific data, reports and findings.[18] The report was funded by the ERCB at the encouragement of Chairman Vern Millard, with contributions from Syncrude Canada Ltd. and Suncor Inc. The project was directed and the report compiled by Dr. Ron Wallace of Dominion Ecological Consulting Ltd., with contributions from several other scientists and community leaders. Wallace's team highlighted four major impact areas of direct relevance to the subsistence needs of the Fort McKay community: wildlife, vegetation and soils, and aquatics and air quality that were recorded in the Bethell report. It is unclear what steps Alberta authorities took to prevent further impacts of environmental degradation on Fort McKay following the publication of these two reports.

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[17] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 27.
[18] Fort McKay Community, "An Issues Assessment for Concerns Regarding Ongoing Oil Sands Developments and the Community of Fort McKay."

During the first development phase of the oil sands industry, Indigenous peoples suffered the brunt of environmental, social and economic impacts, but they were also largely excluded from employment and participation opportunities. The views of Indigenous peoples in the oil sands region were not homogeneous. Most people, especially those most engaged with hunting and trapping opposed the negative environmental impacts of the industry, as for them its impacts were most devastating. But for others, especially younger people who had been born into settled communities and had lost much of their Indigenous language and culture in residential schools, the arrival of the oil sands industry was welcome for its promise of new employment opportunities. This was a promise that could not be discounted, even by those who sought to continue the contact-traditional lifestyle, where collapsing fur prices and increased integration in the southern economy meant that wage labour provided a welcome income supplement. Thus, for the majority, especially in Fort McKay, a poor community that was for many of its inhabitants a recent permanent settlement where the subsistence resource base had been undermined, the pursuit of employment and participation was not a choice but a necessity if they were to feed and clothe their families.

Alberta government approaches to Indigenous peoples in north-eastern Alberta were characterized by indifference loosely couched in terms of assimilating Indigenous people into mainstream society through economic means. Legally, Treaty signatories and Status Indians were the responsibility of the federal government under the *British North America Act* and the *Indian Act.* However, the federal government did not adequately protect the well being of Indigenous peoples in the oil sands region in the 1960s and 1970s. The Alberta Conservation and Utilization Committee's 1972 "Tar Sands

Development Strategy" advocated that the Alberta government create a "multi-purpose public awareness program which would emphasize the prospective developments and condition of the local population, and place special attention on the native people in order to encourage assimilation into the work force and overcome alienation."[19] Peter Lougheed speaking in parliament in 1973 presented Indigenous subsistence hunting, fishing and trapping as vanishing practices, stating that

> We have to keep in mind in this area that we, as a provincial government, cannot interfere, unless there are ways in which we are asked to, with the treaty rights of our Native people. We are all well aware that trapping and fishing is a phasing-out situation to some extent, and we are faced with skilled jobs in areas such as tar sands plants - and there is great transition going to be required in that, considerable patience and not too much false expectation. The progress will be slow and let no one pretend otherwise.[20]

The Lougheed government's perception of Indigenous subsistence practices as vanishing worked to justify the establishment of the oil sands industry by validating the assimilation of Indigenous communities. Broad examination of debates in the Alberta Legislative Assembly reveals that the Alberta government was primarily interested in oil production and economic development in the oil sands region and did not register much concern for Indigenous communities. The Alberta government was minimally concerned with issues of Indigenous employment, yet they largely devolved employment responsibilities to the goodwill of oil sands operators.[21]

In the Alberta Legislature in 1974, opposition leader Bob Clark asked Dr Albert Hohol, Minister of Manpower and Labour, what assurances had been given by the government to Indigenous communities regarding employment on the Syncrude project.

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[19] Conservation and Utilization Committee, "Fort McMurray Athabasca Tar Sands Development Strategy," Policy Paper prepared for the Executive Council, government of Alberta, Edmonton, August 1972, 2, in RG19 vol. 5238 file 9628-15-1 pt.1, LAC.
[20] Peter Lougheed, 18 April 1973, *Alberta Hansard,* 1973, vol.45, p.2410, PAA.
[21] Ex. Bob Bogle's response to Grant Notley, *Alberta Hansard.* 3 May 1976, p.1014.

Minister Hohol responded that Indigenous people had been given "reasonable, practical and sensible assurances" that they would be included in the development of the industry. Clark then asked if these assurances had been put in writing and given to the affected communities. The question prompted an exchange between Albert Hohol and Albert Ludwig, which illustrates the perspective of opposition MLAs to the Lougheed government's inaction on Indigenous employment:

> Dr Hohol: No, Mr. Speaker. I would take the view that the nature of these kinds of assurances...
>
> Mr. Ludwig: B.S.
>
> Dr Hohol: ...are shaken down by discussions with the Native Association of Alberta, the Métis Association of Alberta... the federal government through its Manpower and Immigration Department and various departments of this government, including Industry and Commerce, Advanced Education and Manpower and Labour.
>
> Mr. Ludwig: You faked that one beautifully.[22]

The Alberta government did not act to ensure Indigenous participation in the oil sands industry, but acted on the assumption that industrial projects inevitably benefit local populations.

Two years later, in 1976, the federal government, Syncrude, and the IAA signed an agreement on the hiring of Indigenous people. The agreement read that "Syncrude shall, during the development recruit and offer employment to Indians who hold the necessary educational and technical qualifications and meet Syncrude's normal standards of employment."[23] The agreement also set out plans for training programs, and institutional alliances to better the employment potential of Indigenous peoples. The

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[22] Albert Hohol and Albert Ludwig, *Alberta Hansard*, 10 May 1974, p.1968, PAA.
[23] Her Majesty The Queen in Right of Canada, and Syncrude Canada Ltd., and the Indian Association of Alberta, "Syncrude Indian Employment Agreement," 3 July 1976, in 82.165 file. 273 pt. 1, PAA.

Syncrude agreement stated that efforts would be made to hire Indigenous peoples, but it did not contain any provisions for guaranteeing that they would actually be hired. By the end of September 1976, Syncrude claimed to have received over 400 submissions from Indigenous applicants, but the report stated that "some trouble is being experienced with the Department of Indian Affairs and Northern Development in that their portrayal of the Syncrude job situation for natives is giving rise to unrealistic expectations on the part of Northern Alberta Indians."[24] The Alberta government did not sign the agreement.

For Indigenous peoples, employment in the oil sands industry proved to be a significant disappointment in the 1970s. The Justus-Simonetta "Resource Impact Evaluation" report paints a detailed picture of Indigenous employment in the oil sands industry by 1979. They found that 60.5% of total respondents and 74% of Fort McKay respondents expected to get jobs from the oil sands industry, that over 76% of respondents highly desired jobs and had applied for them despite most people not hearing of oil sands projects, or potential jobs prior to the commencement of construction.[25] Only thirty Indigenous people in total, including twenty-four from Fort McKay, had ever been employed, and only seven people were still employed. Of those no longer employed 33.3% had been laid off, 16.7% had left to go trapping, 16.7% had left because of illness. In terms of duration, 41.7% worked for less than six months, and only 23.6% had worked for more than eighteen months. The majority of jobs were in menial labour, paying $6.50 per hour or less ($19.65 per hour in 2012 dollars), or about $13,000 per year.[26] For most this was not a viable option as family relocation to Fort McMurray cost easily $1000 per

[24] Tom Chambers, P. Eng., M.L.A. to Don Getty, 30 September 1976, in 82.165 file. 285, PAA.
[25] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 40.
[26] "Inflation Calculator," Bank of Canada, Statistics Canada Consumer Price Indexes for Canada, http://www.bankofcanada.ca/rates/related/inflation-calculator/.

month. Even for people living in Fort McKay, expenses were prohibitively high because there was no bus to the GCOS or Syncrude plants. This required employees to take a taxi, which consumed a substantial portion of their income. Respondents also reported that there were only minimal salary increases, and only 13.3% of respondents ever received a promotion. In regards to the Syncrude hiring agreement, the report stated that "it can be said that Syncrude has made some effort to employ Indian people in all job categories. However, the number of Indian [sic] employees, particularly from the immediately local area, has remained relatively low."[27] The pilot training program was seen as a complete failure by Indigenous people, Syncrude and the IAA. Justus-Simonetta reported that

> The Syncrude Agreement represents a well-intentioned attempt by all parties to ensure Indian [sic] participation in employment training and business opportunities in the oil sands area. However, exploratory research in the communities and an analysis of the available documentation reveals a gap between the original intents of the Agreement and the results of implementation efforts, by all parties, to date.[28]

Indigenous peoples were unable to find work in the oil sands industry for numerous reasons. Most of the jobs were in skilled labour, and required training and education that most Indigenous peoples in the region did not have. Another problem was that employment infrastructure was planned around work camps and bussing workers in and out of Fort McMurray. There was no bus service to Fort McKay, which automatically made it more difficult for people from that community to get to a job. Work was often not advertised in Indigenous communities, and there were no Indigenous-specific hiring and training programs. Also, full-time employment was incompatible with the hunting and trapping lifestyle of Indigenous peoples. They could not work full time, as well as pursue

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[27] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 73.
[28] Ibid., 76.

the diminished but still essential practices of hunting and trapping. The unwillingness of many Indigenous employees to commit to full-time employment was not acceptable in the oil sands industry.[29]

Advocacy and conflict

In response to resource degradation and employment exclusion, Fort McKay community leaders began extensive advocacy for environmental protection and participation as residents became more dependent on government welfare and participation in the oil sands industry. As early as 6 May 1971, the Fort McKay Métis population wrote to Stan Daniels, President of the Métis association of Alberta asking him to appeal to government to improve drinking water infrastructure following the pollution of the Athabasca River from sewage from Fort McMurray, writing "please do something about water in McKay because, our children are suffering..."[30] A 1974 appeal from the ECA Public Advisory Committee advocated that oil sands plant authorization be stopped until the need for tailings ponds could be eliminated and for the creation of an Indigenous advisory board to be included in policy decisions to help manage the environmental impacts of the industry on their communities.[31]

The first major statement of the negative environmental impacts on Fort McKay was the community`s intervention at the ERCB hearing for the GCOS application to expand its plant from 45,000 to 60,000 bbl./d, in January 1979.[32] The community

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[29] Justus and Simonetta, "Major Resource Impact Evaluation, Prepared for the Cold Lake Band and The Indian and Inuit Affairs Program," 73.
[30] Fort McKay Local #122, to Stan Daniels, 6 May 1971, in M4755 File.470, GA.
[31] Bernice Leaver, Supervisor, PAC Secretariat, to Stan Daniels, President, Métis Association of Alberta, 4 December 1974, in M4755 file.709, GA.
[32] "Intervention filed with The Energy Resources Conservation Board by The Fort McKay Community Committee in relation to the proposed GCOS Expansion Application 780318." Energy Resources

expressed concern that plant expansion would worsen the problem of sulphur dioxide emissions, which had had a negative impact on wildlife and fish, and that the emissions were presenting a direct health hazard in winter to the many people who melted snow for water. One of the most immediate impacts on the Fort McKay community's hunting and trapping practices was the construction of the GCOS plant on Tar Island, one of the prime hunting grounds in the region, and the site of the much of the community's summer hunt camps and trap lines:

> Before 1960, Fort McKay was a relatively isolated settlement having little contact with the 'outside world'. The building of the Great Canadian Oil Sands plant in the 1960s marked the beginning of the encroachment of major resource development upon the settlement. The plant was constructed on the summer residence for many families from Fort McKay. The construction of the plant provided the first major conflict between the traditional lifestyle of the community and an industrialized way of life. In such a conflict, the 'old way' can not win [sic]. A giant like the GCOS has not changed its way because of Fort McKay. But certainly our community has had to turn 'upside down' for GCOS and other specific resource developments.[33]

The destruction of trap lines was poorly compensated. Trappers were given $20, a menial sum that did not cover the cost of cabins and traps needed to run the line. A man from Fort McKay who lost his trap line, interviewed by Michael Fox said,

> Money doesn't mean anything to a person losing a trap line. If they offered me enough to start another living, there would be no problem. Offering money for a trap line is not the point. Not much a guy can do. Try to get money. The developer should pay for cabins and traps.[34]

The major issue for many trappers was not exclusively the destruction of trap lines, but also the lack of replacement jobs to earn a living in lieu of the traditional economy. The

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Conservation Board, Application No. 780318, 19 January 1979, ERCB Archives.

[33] "Intervention filed with The Energy Resources Conservation Board by The Fort McKay Community Committee in relation to the proposed GCOS Expansion Application 780318." Energy Resources Conservation Board, Application No. 780318, 19 January 1979, ERCB Archives.

[34] Michael G. Fox, "The Impact of Oil Sands Development on Trapping with Management Implications" (Master's Thesis, University of Calgary, 1977), 136.

community perceived GCOS and the Alberta government as circumventing the environmental issues associated with the plant. They told the ERCB that "GCOS has not made any attempt to explain to the residents of Fort McKay the results of environmental monitoring by the company and by the Alberta Oil Sands Environmental Research Program." The community decried the impact on water which they said had "deteriorated significantly since the construction of the GCOS plant." The community committee concluded that,

> in the present application for expansion, GCOS appears to once again adopt the stance that environmental social and economic impacts upon the settlement of Fort McKay are not the responsibility of the company, and consequently are not relevant to company interests. Yet this company was the first to change our way of life. We can not go back to the old way of life which has been destroyed.[35]

For Fort McKay the ERCB approval of the GCOS expansion, after such testimony about the impacts of the project, was devastating.

Shortly after the expansion of the Suncor plant, in December 1981, unusually extreme cold weather came through the Athabasca River valley and equipment throughout the region struggled. In Fort McKay the propane heater on the south water tank malfunctioned and the entire structure burnt down. The heater on the north tank failed and the tank froze, turning the remainder of the town's water into ice, which cracked and destroyed the tank as it expanded. The failure of the water system caused a crisis. Melted snow was reportedly "disgusting and undrinkable," causing nausea and vomiting. Residents were forced to take water from the contaminated river because they had no other option. At the recently expanded Suncor plant, cold temperatures caused

[35] "Intervention filed with The Energy Resources Conservation Board by The Fort McKay Community Committee in relation to the proposed GCOS Expansion Application 780318." Energy Resources Conservation Board, Application No. 780318, 19 January 1979, ERCB Archives.

equipment failures in late December 1981, that were compounded by fires in January 1982, which caused major spills of oil, grease and phenols into the Athabasca River that continued until the end of February. In the course of a few days more than forty tonnes of toxic waste and chemicals were spilled into the river.[36] Suncor did not inform Fort McKay that a spill had occurred until 23 February, despite having been told to do so by Alberta Environment on 26 January. Suncor did not send anyone to the community to explain the problem, but invited Chief Dorothy MacDonald for a plant tour, during which she was told that the plant was having problems and an oil spill had occurred. As news of the Suncor spill became widely known, an emergency water delivery system was established that was relied on by the community into the late 1980s.[37]

Figure 8: A Fort McKay residence pictured in, "Northern Natives Frustrated," *The Red Deer Advocate*, 1 February 1980, Alsands Press Clippings Vol. 3, GA. Used with permission.

[36] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 39..
[37] Ibid., 40

Environment Minister John Cookson told Ken Nelson from *Fort McMurray Today* that "Both the ERCB and my department are concerned why this happened. The company has to tell us why machines failed, what staff was on duty to manage, and submit recommendations."[38] Chief Dorothy MacDonald was furious about the situation, asking in a press conference, "Where the hell was the government when all this was going on? Why didn't the Department of the Environment tell us what was going on and why didn't they conduct testing themselves?"[39] MacDonald asked the Alberta government about the system in which oil sands plants were required to monitor their own pollution and report to the province, "How foolish can you be to allow a company like Suncor to conduct its own monitoring? Do bank robbers turn themselves in after they've done the job?" In response to the oil spill and pending inquiry, Alberta MLA Grant Notley pointed to regulatory issues, stating in parliament, "we know Suncor has violated the law, what an inquiry needs to find out is why the department allowed them to violate the law."[40] Commenting on Cookson's announcement of an investigation that "It's a whitewash when they don't include an investigation of the department's performance. I think one thing that now is quite common throughout the province is we've got a Department of the Environment that is badly managed and incompetently led." Jackie Macdonald of *Fort McMurray Today* reported that "provincial tests on foul-tasting fish downstream from the Suncor oil sands plant have revealed the fish are polluted, a spokesman in associate Wildlife Minister Bud Miller's office said

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[38] Ken Nelson, "Charges probable against Suncor during waste-water probe," *Fort McMurray Today*, 17 March 1982, in Alsands Press Clippings M-6328 Box. 2, GA.
[39] "Suncor faces spill inquiry," *Fort McMurray Today*. 18 March 1982, Alsands Press Clippings M-6328 Box. 2, GA.
[40] Ibid.

Wednesday."[41] Bill Diachuk Minister for Workers Health, Safety and Compensation reported that testing of Suncor effluents revealed an abundance of polychlorinated biphenyls (PCBs), toxic aromatic compounds.[42] The following week *Fort McMurray Today* reported that samples of pickerel taken from Lake Athabasca near Fort Chipewyan had an oily taste and that the Lake had high levels of PCBs. The Associate Minster of Public Lands and Wildlife Bud Miller warned people downstream of Fort McMurray not to eat fish from the lake or the river and delayed the commercial fishing season to June pending the results of testing.[43]

In the Legislative Assembly, Grant Notley criticized the response of the Alberta government, condemning the inaction of Environment Minister John Cookson in his failure to inform the community of the spill and his dismissal of the seriousness of Suncor's *Clean Water Act* violations. Notley drew attention to the Alberta Department of Environment pollution control division's "Summary of Suncor Inc. Wastewater Treatment System Performance, June 1978 to Date," which stated that Suncor had exceeded its water pollution allowances in 36 of the preceding 43 months. He decried the government's inaction and highlighted the change in policy of the Lougheed government after ten years of involvement in the oil sands industry, telling the Legislative Assembly:

> I well remember when we had an oil spill on the Athabasca River in 1970, and the now Premier was Leader of the Opposition... the now provincial Treasurer (William Yurko) and the now Premier raised the roof over this oil spill... One of the most searing indictments the now Premier... made about the former government was that they had an interdepartmental inquiry into what happened on that oil spill. The now Premier... said,

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[41] Jackie MacDonald, "Fish from Athabasca polluted," *Fort McMurray Today*, 6 May 1982, in Alsands Press Clippings M-6328 box. 5, GA.
[42] Ken Nelson, "PCBs found in Suncor fluid," *Fort McMurray Today*, 5 May 1982, in Alsands Press Clippings M-6328 box. 5, GA.
[43] Ken Nelson, "More foul fish taken from river," *Fort McMurray Today*, 14 May 1982, Alsands Press Clippings M-6328 box. 5, GA.

> 'how in heaven's name can you investigate yourself; we should have some kind of independent investigation...'[44]

Notely called on government to have an independent investigation of the Suncor violations and for an open approach to environmental regulation. Edd Uluschak parodied Lougheed's inaction on the Syncrude and Suncor violations with a cartoon published in the *Edmonton Journal* that equated him with the three wise monkeys, 'hear no evil, see no evil, say no evil, smell no evil' (Figure 13).

Figure 13: Edd Uluschak, "Syncrude violations, Suncor violations," political cartoon, *The Edmonton Journal* (1982), in 1988-025 01003, LAC. Used with permission.

[44] Grant Notley, *Alberta Hansard,* 5 April 1982, p. 498.

Suncor was charged with seven violations of the federal *Fisheries Act*, and two charges of violations of the Alberta *Clean Water Act.* Five of the *Fisheries Act* charges were brought directly by Dorothy MacDonald and Fort McKay, but the charges were taken over by the Attorney General. MacDonald expressed disappointment, being unable to fight her community's battle in court. She told *Fort McMurray Today* that "I have no choice but to accept it," and that the band was considering other legal options.[45] In court, Suncor argued that it had exercised due diligence in attempting to prevent effluent flow into the Athabasca River, plead not guilty, and was acquitted. The Crown appealed the decision in the Alberta Court of Appeal. The charges were limited to four counts of unlawful deposit of a deleterious substance in water frequented by fish under section 33(2) of the *Fisheries Act,* as the judge in the trial of the charges under the *Clean Water Act* found that the respondent had "exercised due diligence in attempting to prevent the flow of effluent into the Athabasca River." The court's preliminary ruling was that the case drawn by the Crown was "defective in many respects, and the whole procedure by which the ordinary summary conviction appeal process is short-circuited cannot be commended."[46] The court stated that "Had the Crown proceeded in the usual way, the appeal would have had the advantage of proceeding in the community where the offence was alleged to have occurred." The court noted unnecessary disorganization as the charges were all brought separately, which lead to a repetition of evidence. The court maintained Justice M. Horrocks's acceptance of the defence of due diligence during the initial trial, and dismissed the appeals.[47] For the residents of Fort McKay, and also Fort

[45] Jackie MacDonald, "Fish from Athabasca polluted," *Fort McMurray Today*, 6 May 1982, in Alsands Press Clippings M-6328 box. 5, GA.
[46] *R. v. Suncor Inc.*, 1983, Alberta Court of Appeal, 219, Appeal #16352, 15 September 1983.
[47] Ibid.

Chipewyan, the legal process failed to bring Suncor to justice for polluting the Athabasca River. The ruling of *R. v. Suncor Inc.* suggests that the Crown poorly managed the case. On a broader level, the case is an example of the difficulties faced by Indigenous communities seeking legal recourse for the environmental impacts of industrial projects.

In spite significant environmental degradation, Indigenous people fought hard for participation in the oil sands industry. While Chief Dorothy MacDonald primarily sought environmental protection, the young secretary treasurer, Jim Boucher, focused on participation and employment. For Indigenous communities, the two issues were equally important. It was important for Indigenous communities to protect their natural resource base, but considering the increase in permanent settlement and greater involvement of many of these communities in the southern economy, they also needed money. This was especially important in Indigenous communities such as Fort McKay, where subsistence resources had been devastated. Age twenty-three in 1979, Boucher represented the generation that had grown up in a settled community and been educated in residential schools. While people of his generation continued to be highly dependent on the land for subsistence, they also had a greater connection to the industrial world. In an interview with the *Edmonton Journal*, Boucher stated that resource development in the area had made it impossible for community members to maintain a traditional way of life, and that within less than two decades the once isolated community had been completely upset.[48] From Boucher's perspective, there was no choice but to work with government and industry to seek participation. He told the *Edmonton Journal* that Fort McKay supported the Alsands project and the proposal to build a new town. Boucher despised hand-outs,

[48] Tom Campbell, "Union word needed in native hiring," *Edmonton Journal*, 5 July 1979, in Alsands Press Clippings 5, GA.

and sought autonomy, a guarantee of the town's existence, infrastructure improvements, land tenure, a reduction of pollution impacts, and affirmative action hiring programs.[49]

The Alberta government did work to ensure that Indigenous peoples would be able to benefit from the employment opportunities in oil sands development. A policy paper from the federal Department of Energy, Mines and Resources from September 1980 assessed the Alberta government position on Indigenous participation. The report maintained that

> There is no evidence of provincial concern for native participation in the Alsands project. The government has not yet applied the September 1980 amendment to the Alberta Individual Rights Protection Act which provides for special affirmative action programs by Order-in-Council, and it is not clear whether the Cabinet is willing to do so.

The report continued, pointing out that Alberta had not signed the Syncrude hiring agreement, and had "generally taken the position that special programs which operate in favour of status Indians (as proposed by the federal government) discriminate against non-status Indians and Métis."[50] Although local people and the federal government recognized that the hiring of Indigenous peoples was more or less a failure, MLAs in the Alberta government maintained as late as the 1980s that the hiring of Indigenous peoples had been a success. Norm Weiss, MLA for Lac La Biche-McMurray, championed the efforts of the private sector, stating that "the employment of natives by Syncrude and Great Canadian Oil Sands has shown a dedication to equality and human rights that our government can be proud of."[51] In response to a question from Grant Notley about the poverty of the Alberta government's Indigenous hiring policy in 1981, Dr Don

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[49] Bobbi Lambright, "Fort McKay residents seek assurances from government," *Fort McMurray Today*, 5 July 1979, in Alsands Press Clippings 5, GA.
[50] "Alsands Project Policy Paper," federal Department of Energy, Mines and Resources, September 1980, RG131 vol.164 file.4300-12 (vol.1) EMR - ALSANDS, LAC.
[51] Norm Weiss *Alberta Hansard*, 28 May 1979.

McCrimmon replied that "the history of Syncrude disproves what the Hon. Member is saying. When these megaprojects go ahead, I think the companies have been pretty conscientious and pretty good about trying to get the native people working in them as much as possible."[52] The Alberta government operated on the presumption that Indigenous peoples were benefitting from the development of the oil sands industry, while doing little to ensure that this was actually the case.

In response to the disappointing hiring situation, Indigenous communities from Fort McMurray, Anzac, Janvier, Fort McKay and Fort Chipewyan formed the Athabasca Tribal Council to unify their voice on oil sands industry matters, especially employment and participation. As interveners in the Alsands ERCB hearings, the ATC sought the implementation of an affirmative action hiring program as a condition of approval for the Alsands project.[53] The program would have legally bound Alsands to hiring Indigenous workers. The ERCB determined that though it was sympathetic to the Indigenous hiring situation, it did not have power under section 43 of the *Oil and Gas Conservation Act* to prescribe the implementation of such a program.[54] The ATC appealed the decision to the Alberta Court of Appeal, which dismissed the case, ruling that the affirmative action program was out of the ERCB's jurisdiction, and that such a program might be in breach of the *Individual Rights Protection Act,* as a form of reverse discrimination. The Supreme Court of Canada dismissed a further appeal, but ruled that affirmative action programs did not breach the *Individual Rights Protection Act,* as "the plan was not to displace non-Indians from their employment, but rather to advance the lot of Indians so that they could

[52] Don McCrimmon reply to Grant Notley, *Alberta Hansard,* 6 April 1981.
[53] Athabasca Tribal Council, "Presentation to the Energy Resources Conservation Board," ERCB Hearings on the Alsands Project Group - Oil Sands Mining Project - Application # 780724, June 1979, in RG131 vol.164 file.4300-12 (vol.5) EMR - ALSANDS 4, LAC.
[54] *Athabasca Tribal Council v. Amoco Petroleum Co.* Supreme Court of Canada, 4-5 December 1980 and 22 June 1981.

be in a competitive position to obtain employment without regard to the handicaps which their race inherited."[55] The ruling was a disappointment for the ATC, but the Supreme Court's declaration that affirmative action programs do not constitute reverse discrimination established an important legal precedent that was seen as a victory in that developers could not cite the *Individual Rights Protection Act* to prevent the tabling of future affirmative action programs, as had been done in the Alsands case.[56]

In response to the defeat in court, ATC Chairman Lawrence Courteoreille told the *Red Deer Advocate* that "the province should replace the ERCB if it has no actual authority to rule on the social needs of Albertans... the provincial government has been telling us our concerns can only be heard through the ERCB. The province is just paying for a public relations job for industry."[57] In 1980 both the ATC and the IAA appealed to the highest levels of the federal government to seek improved participation in the oil sands industry. Joe Dion, President of the IAA wrote to Prime Minister Pierre Elliot Trudeau,

> Development of Canada's resources has not been in partnership with Canada's Native people. Rather, it has occurred to the detriment of the traditional economies and lifestyles of Indian peoples. Being isolated from participation has caused no significant rise in income of Indian communities, and, as a result, Indian people do not have the capacity to finance their future developments. It is fundamental in our view, that the need for aid should eventually subside and this can only be accomplished with the growth in the capacity of Indians to help themselves.[58]

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[55] *Athabasca Tribal Council v. Amoco Petroleum Co.* Supreme Court of Canada, 4-5 December 1980 and 22 June 1981.

[56] Farrell Crook, "Alberta Indians win a big one - by losing: A high court ruling means special programs to help Indians are not legally reverse discrimination," *Toronto Star*, 4 July 1981, in Alsands Press Clippings 1, GA.

[57] "Supreme Court denies native-hiring program appeal," *Red Deer Advocate*, 23 June 1981, in Alsands Press Clippings 1, GA.

[58] Joe Dion to Pierre Elliot Trudeau, 6 February 1980, in RG131 vol.164 file.4300-12 (vol.7) EMR ALSANDS, LAC.

Dion advocated affirmative action and equity participation in the Alsands project. Lawrence Courteorielle wrote to Marc Lalonde, Lloyd Axworthy, John Munro and Jean Chrétien seeking a greater share of participation in the Alsands project, specifically the establishment of affirmative action hiring programs, infrastructure spending, housing and greater efforts to minimize the social impacts of industrialization.[59] The IAA and the ATC were able to influence the federal government to aid their interests by helping to encourage affirmative action programs. The National Energy Program explicitly required that Alsands implement a preferential hiring program for Indigenous people as a condition of preferential oil pricing.[60]

During the planning of the Alsands project, Indigenous communities fought hard to ensure environmental protection and even to stop the project. At the Alsands ERCB hearings in 1979, the Fort McKay community presented an intervention of similar intensity to that presented at the GCOS expansion hearing. Chief Dorothy MacDonald sought three objectives in negotiating the Alsands project: protection of the traditional lifestyles of hunters and trappers by expanding a separate land base under band control, establishing an economic development base for the community, and the establishment of better training and employment for Fort McKay residents who wanted to work.[61] These concerns were largely disregarded. On 5 June 1979, Alberta Energy Minister Mervin Leitch announced that there would not be public hearings in Fort McKay, and that he was unaware of any major local concerns about the plant.[62] He maintained that the major

[59] Lawrence Courteorielle to Marc Lalonde, John Munro, Jean Chrétien, Lloyd Axworthy, 25 April 1980, in RG131 vol.164 file.4300-12 (vol.3) EMR - ALSANDS, LAC.
[60] Lalonde, "The National Energy Program."
[61] Ken Nelson, "Tiny McKay battles a mega-project," *Fort McMurray Today*, 11 February 1982, in Alsands Press Clippings 2, GA.
[62] "No public hearings being planned on Fort McKay oil sands plant," Edmonton Journal, 5 June 1979, in Alsands Press Clippings M-6328 Box. 1, GA.

consideration in building the Alsands project was the economy. Other than the opportunity to intervene at the ERCB hearing, the Fort McKay community was largely excluded from the environmental review of the Alsands project. A review of the Alsands EIA by the Department of Indian Affairs and Northern Development stated that

> It appears no effort has been taken to include or obtain the oral history of Indian elders in the area. It also appears that the Indian Association of Alberta and the Individual Indian Bands were not consulted, and this is a pity given the I.A.A. has completed band histories jointly with several Bands in the area.[63]

Such omissions reflect persistent differences between scientific research and indigenous knowledge and the subsequent marginalization of Indigenous perspectives on environmental issues.

In 1981, as Chief of Fort McKay and Chair of the Athabasca Tribal Council, Dorothy MacDonald wrote to Bud Olson, Alberta Minister of State For Economic Development to express that the Fort McKay Indian Band and the ATC's requests for affirmative action hiring programs, environmental protection, and the protection of Treaty and Indigenous rights had been omitted from the Alsands Agreement. She wrote that

> We understand that a number of very important elements will not be included in this agreement and we are completely opposed to the signing of this agreement until these elements have been worked out. If this does not happen we will be left out the same way we were when the Suncor and Syncrude plants opened. We suffered all the impacts and someone else received all the benefits.[64]

McDonald proposed that Alsands be required to negotiate separate socio-economic benefit agreements in each impacted community.

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[63] Department of Indian Affairs and Northern Development, "General and Specific Comments on Alsands EIA," May 1979, in RG131 vol.164 file.4300-12 (vol.5) EMR - ALSANDS 4, LAC.
[64] Dorothy MacDonald to Bud Olson, 4 December 1981, in RG131 vol.164 file.4300-12 (vol.2), EMR - ALSANDS, LAC.

The Fort McKay community fought hard to have their voices heard in Alsands planning processes but were consistently rejected by the Alberta government. ERCB chairman Vern Millard wrote to Chief Dorothy MacDonald stating that Fort McKay's claims of long-term health problems and negligent management of toxic effluents by oil sands companies did not justify further hearings, "the alleged long-term environmental and health impacts from oil sands development are, in the board's view, not substantiated. If they should be proven, the Board and Alberta Environment would undoubtedly take the appropriate action." He maintained that research into the ability of the new plant to deal with possible chemical and oil spills would not "serve any useful purpose." He also wrote off compensation and housing issues as not part of the ERCB's jurisdiction.[65] Chief MacDonald told *Fort McMurray Today* that "the response of the board is an absolute outrage." She criticized the review process, stating:

> The board says it won't act until there is evidence but it refuses to re-open the hearings to hear the evidence. They never considered health impacts at the hearings in 1979. It's fairly obvious that the ERCB is just a political body with absolutely no interest in human health.[66]

She continued, "the only acceptable evidence to them is if we rolled in with a wheel barrow with someone dead in it. The province is so intent on resource development that they don't care what impact it has on people. They just don't care what the public health cost is."[67] The efforts of Fort McKay to gain serious recognition of their environmental concerns were not successful. Though the community took significant steps to participate in the planning and regulation of the oil sands industry, the community never achieved

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[65] Ed Struzik, "Indians' demand rejected," *Edmonton Journal*, 18 February 1982, in Alsands Press Clippings 2, GA.
[66] Jackie MacDonald, "Indian demand for Alsands talks nixed," *Fort McMurray Today*, 19 February 1982, in Alsands Press Clippings 2, GA.
[67] Struzik, "Indians' demand rejected."

the power to meaningfully influence government or industry. The Alsands plant was eventually cancelled following the collapse of the consortium, after the drop in oil prices beginning in 1982.

Following the failure of the Alsands project the people of Fort McKay were spared from a further increase in the rate of environmental destruction from a third oil sands plant designed to produce 125,00 bbl./d. By 1985 Fort McKay maintained that the oil sands industry had still not delivered jobs. For example, Alsands had promised that during construction of the bridge, all who sought work could have it, but only one man was hired.[68] Although the Alsands project failed, the important gains made by the efforts of the IAA and the ATC were not a complete loss. Despite the failure of the Syncrude hiring agreement of 1976, Syncrude became a more proactive industry employer of Indigenous peoples at the end of the 1980s. Progress began with the hiring of Eric Newell as CEO and Chairman in 1989. In a 2012 interview he told the *Calgary Herald,* regarding the hiring of Indigenous peoples in the 1980s, that Syncrude

> ...made every mistake in the book...We thought we were in a hiring program, but as fast as we could hire young aboriginal workers, we would let them go. We realized that taking some person from a little community of 250 people and throwing them into an industrial complex like Syncrude was not a formula for success.

Under Newell, Syncrude pursued Indigenous education and development programs that eventually led the company to become one of the foremost employers of Indigenous peoples in Canada. Efforts of Indigenous peoples to challenge the environmental impacts

[68] Bethell, "Preliminary Inventory of the Envrionmental Issues and Concerns Affecting the People of Fort MacKay Alberta," 44.

of the oil sands industry failed, but their efforts to gain increased participation were the slow and painful beginning of what would eventually become a success story.[69]

Conclusion

The process of treaty making, surveying and mapping was a form of colonization that imposed a southern framework of resource development on the oil sands region before supply pressures mobilized the construction of the commercial oil sands industry in the 1960s. The Alberta Government had minimal concern for Indigenous peoples, since it considered them to be a federal responsibility. The environmental impacts of the oil sands industry, especially in Fort McKay, undermined the ability of the community to subsist from the contact-traditional economy. Despite extensive efforts, the community had no effective recourse to deal with the industry's environmental impacts. As the resource base of Fort McKay was destroyed, the community was forced to participate in the oil sands industry for its survival. However, Indigenous peoples throughout the first development phase of the oil sands industry were largely excluded from employment. The Syncrude hiring agreement of 1976 was an almost complete failure. Efforts of the ATC to secure an affirmative action program were defeated in the Supreme Court but were successful in persuading the federal government to make Indigenous hiring a requirement of pricing allowances for Alsands. As that project failed, the participation of Indigenous peoples was delayed.

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[69] Robert Remington, "Remington: 'Syncrude solution' may tap potential of aboriginals," *The Calgary Herald* 8 June 2012.

CONCLUSION

The industrial colonization of the oil sands region began as a legal process in which the Dominion of Canada purchased the Hudson's Bay Company's lands in 1870 and signed Treaty 8 with the region's Indigenous communities in 1899 to extinguish their land rights and secure sole ownership of the region's resources. Speculative knowledge from the reports of the Geological Survey, rather than the proven viability of oil sands development, prompted exploration efforts by the Department of Mines in the first decades of the 20th century. Drawing on Bridge's observations of the social construction of global extractive spaces, combined with the colonizing powers of Canadian resource maps, shows that Canadian government officials rebranded the Athabasca region as a future industrial hinterland long before the physical construction of the industry. In terms advocated by scholars including Coates and Morrison, Quiring, and Tough, the development of the oil sands industry between the mid-1960s and the mid-1980s was a prime case of intra-provincial colonization. The physical construction of the industry involved the appropriation of Indigenous territory, its population by settlers, and the extraction of bitumen for economic gain.

Zaslow's emphasis on the importance of government institutions is valuable to the analysis of oil sands exploration as a colonial force in the early 1900s. As synthetic oil production was for so long an uneconomic endeavour, the efforts of the Alberta and federal governments figured prominently in development efforts, such as in funding the explorations of Sidney Ells, the research of Karl Clark, and the operation of the Abasand and Bitumount plants. Following the 1930 NRTA and the exodus of the of federal

government following the conclusion of the Second World War, the Alberta government became the dominant government player in the oil sands industry. As the primary financiers of the Bitumount plant, the Social Credit government took the first steps towards promoting the success of bitumen production by exempting the resource from the ERCB's pro-rationing regulations in the 1950s.

In the 1960s and 1970s the Alberta synthetic oil industry came to prominence as a crisis fuel funded largely by investments from the United States oil industry. Sun Oil's investments in Great Canadian Oil Sands Limited resulted in the construction of the first commercial plant in 1967. Following the election of Peter Lougheed in 1971, the Alberta government sought to promote the oil sands industry, but also to carefully regulate it to ensure the maximum accrual of socio-economic benefits to Albertans, and to minimize social and environmental impacts by profiting from the investments of foreign companies. Lougheed was well aware of the historical reliance of the national and Alberta economies on resource extraction. He was wary of avoiding rapid exploitation and the boom and bust of Alberta conventional oil production. He sought to exercise government dominance over the industry to prevent the exploitation of Alberta oil by U.S. producers. To a significant degree the efforts of the Lougheed government resonate with the efforts of the Ontario government to preserve the manufacturing condition in the timber industry in the years surrounding the turn of the 19th century described by Nelles.[1] In 1890s Ontario, the provincial government could not escape the staples trap despite imposing timber milling requirements rather than the export of raw logs to big U.S. mills,

[1] Nelles, *The Politics of Development: Forests, Mines and Hydro-Electric Power in Ontario, 1849-1941.*

to maximize the domestic accrual of economic benefits from primary resource production.

With the OPEC crisis, the stakes changed as domestic energy security emerged as a new governing factor in the planning of oil sands projects. In response, the Alberta government regulatory approach was side-lined in favour of a more aggressive position. Unlike the Ontario governments described by Nelles that became clients of the business community through dealing with resource development projects, Lougheed's Conservative government emerged by the middle of the decade as a developer of the oil sands industry, financially invested in the Syncrude project. However, similar to the dynamics described by Nelles, Alberta's investments produced a degree of regulatory capture in Alberta in that oil sands production was prioritized above all else by the mid-1970s. As a member of the oil sands industry, Alberta's provincial government morphed into a corporate player committed to the success of its investments. By investing in the industry, the Alberta government blurred the line between business and government. As the OPEC crisis worsened towards the end of the 1970s and synthetic oil production became profitable, the federal government sought an unprecedented level of intervention in the oil industry to protect Canadian consumers and to balance the accrual of resource rents with interventionist policies that culminated with the NEP. The complex struggle between the federal and provincial governments and industry shaped the development of the oil sands industry in a way that marginalized the environmental, social and economic impacts associated with the production of synthetic oil.

The 1970s were formative years for environmental policy and management at the federal and provincial levels. The environmental concerns of the federal and Alberta

governments transformed from a focus on wildlife conservation in the 1950s and 60s, to the writing of laws oriented towards pollution prevention such as the Alberta *Clean Air* and *Clean Water Acts*, the formation of the ECA, and the creation of the federal and Alberta Departments of Environment. The OPEC price increases and Alberta and Canada's investment in Syncrude created a development imperative that conflicted with Alberta's intention to closely control the growth of the industry. The emergence of the contradictory government priorities of industrial development produced the regulatory struggle foreshadowed by Zaslow. Weak environmental requirements facilitated regulatory concessions granted to GCOS and to Syncrude, especially higher permissible sulphur dioxide emissions. The result was that environmental regulations were reduced and overlooked in project negotiations dominated by supply security concerns. The AOSERP program, though at first independent, well funded and progressive, struggled with government co-optation before re-organization and eventual collapse following the withdrawal of the federal government in 1979. Though Alberta set precedent as the first Canadian province to develop serious environmental policy, further investment in and empowerment of environmental regulation trailed behind the rapid development of the oil sands industry. Reports and assertions by the AOSERP program, the oil sands industry and government towards the end of the 1970s stated that synthetic oil production activities had not had significant adverse environmental impacts. Other significant research including from Alberta Environment and the observations of Indigenous communities indicated that serious damage was taking place.

Based on the very nature of the bitumen, as a large scale, low-grade hydrocarbon deposit that requires massive land disturbance to extract and huge water and energy

inputs to turn into a marketable product, it may not have been possible for the oil sands industry to have had less of an impact on the Athabasca environment. Perhaps, as various forms of unconventional oil such as shale oil, deep sea and arctic oil, and upgraded bitumen become the standard sources of petroleum, the price will not just be a higher economic cost, but a higher environmental cost inherent in the way unconventional hydrocarbon resources are extracted and upgraded regardless of the care, independence and empowerment given to environmental research and regulation.

The first development phase of the oil sands industry, in conjunction with the broader industrial colonization of the Peace-Athabasca Delta, had significant adverse environmental, social and economic consequences for proximate Indigenous communities. The environmental impacts of the oil sands industry, especially in Fort McKay, undermined the ability of the community to subsist from the contact-traditional economy which had sustained them before the influx of industrial development. Despite extensive efforts, the community had no effective recourse to deal with the industry's environmental impact. As Brownlie and Kelm have suggested, looking at both the impact on and agency of Indigenous peoples faced with colonialism is essential so as to more accurately evaluate the history of the oil sands industry. The Fort McKay community in the 1970s and 80s was forced to challenge the Alberta government and the oil sands industry in the settler venues of law and media. While the community was able to competently navigate the imposed system, they were completely unable to prevent the environmental degradation that destroyed their natural resources. Similar to what Tough has argued in reference to Indigenous participation in Manitoba industrial labour, that the

Fort McKay community was able to make certain choices and actively navigate the new social and legal system imposed around them, it was not a significant measure of power.

The environmental impacts of the oil sands industry contributed to the industrial colonization of the oil sands region, as the destruction of natural resources forced Indigenous peoples to adapt to the southern economy. Yet indigenous peoples were largely excluded from employment in the oil sands industry during the first phase of development. Negligible numbers of people were employed, only for short and inconsistent periods of time, and almost exclusively in menial labour. To combat the lack of employment opportunities, the region's Indigenous communities formed the ATC to lobby industry and government for preferential hiring schemes to improve employment. Although the efforts of the ATC to secure an affirmative action program failed in the Supreme Court, more success was achieved in lobbying the federal government to make Indigenous hiring a requirement of pricing allowances for Alsands. Following the collapse of oil prices in the mid 1980s, the failure of the Alsands and Canstar projects, the defeat of the Trudeau government and stepping aside of Peter Lougheed, no new oil sands plants were built until the late 1990s.

The first development phase of the oil sands industry can teach some significant lessons about resource dependence and regulation in Canada. As Alberta had for so long been reliant on resource export for much of its economic health, when conventional oil declined it became economically dependent on the successful establishment of the oil sands industry. Lougheed recognized the importance of the resource, but was also wary of it being hi-jacked by foreign investors and markets hungry for cheap Canadian energy exports. By becoming involved in the industry as a financial player, the Alberta

government entered a state/capital partnership in which it became trapped in a position that prevented it from imposing environmental regulations that would increase the costs of development. Were the province less dependent and not financially invested, they may have been at greater liberty to regulate the industry according to criteria beyond the bottom line.

In the prevailing regulatory dynamic, the environmental, social and economic impacts of the industry were downloaded to proximate communities who relied on the health of their environment for income and sustenance, yet publicly funded environmental research failed to reveal many of the impacts on these communities. The Alberta government neglected their well-being as a federal responsibility, while assuming that industrial development would bear employment and other benefits. The notion that local people invariably benefit from resource development, an argument regularly put forth as conventional wisdom by extractive industries, was in this case and many others a fallacy. As resource extraction becomes more sophisticated, so too do employment requirements. For indigenous communities to benefit, they need better education systems and early training and hiring programs that will actively seek their engagement in industrial development.

The Canadian economy has always been largely dependent on resource extraction, and as global energy and resource needs are rapidly increasing it seems unlikely that this economic dependence is going change. But with better and more honest regulation, the avoidance of state-capital partnerships, and earlier, more proactive consultation and collaboration with Indigenous communities faced with development, perhaps some of the adverse consequences of industrial development can be prevented

and the benefits can be more equitably distributed. Canada is currently experiencing another resource boom, with many new oil sands projects being established in the last few years and mining companies spending millions on exploration and new development. If the current Alberta Conservative government of Premier Alison Redford can successfully establish the independent monitoring and regulatory agencies it seeks to develop, there is hope that future oil sands projects will be more equitably assessed and have fewer adverse environmental impacts.[2] However, if Indigenous peoples continue to be neglected in the planning, development, operation and closure of extractive projects, Canada's legacy of industrial colonization will continue to have significant consequences for Indigenous communities.

[2] "Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring," Government of Canada and Government of Alberta, http://environment.gov.ab.ca/info/library/8704.pdf., and "Regulatory Enhancement Project," Government of Alberta, http://www.energy.alberta.ca/initiatives/regulatoryenhancement.asp.

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